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EDUCATIONAL DIRECTIONS AT THE UNIVERSITY OF ILLINOIS

STATEMENT BY THE UNIVERSITY STUDY COMMITTEE ON FUTURE PROGRAMS

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EDUCATIONAL DIRECTIONS AT THE UNIVERSITY OF ILLINOIS

*A Statement by the University Study Committee
on Future Programs*

JANUARY, 1963

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Preface

In educational planning there is much to be said for a certain humility in the presence of confusing alternatives and overwhelming demands for expansion. The planner is required to limit his field, pursue fact carefully, retain a firm hold on reality. The report which follows, *Educational Directions at the University of Illinois*, has been prepared in that spirit.

Such indeed was the spirit of the charge given to the University Study Committee on Future Programs when it was established in 1957. It was assumed that to look broadly at the University of Illinois as it nears its one hundredth year of service is to search for some large generalizations which may guide its development in its second century:

While I do not wish to restrict the committee in its assessment of the tasks ahead, it is my hope that it will emphasize outstanding guidelines for future development, some points of emphasis, some restated objectives, some new objectives and programs to implement these suggestions. In short, I hope the committee will give us the ground work for future educational planning for the University.

Many units of the University have plans for the future. Some do not and perhaps should be stimulated to prepare them. An over-all view of these plans and a canvass of areas for experimentation should be a part of the committee's analysis. . . . I hope the committee will be a medium for institutional self-examination, along certain broad outlines, with suggestions for next steps in over-all educational planning.¹

Within the University, each one has his list of favored themes. From personal experience, each has his own inventory of needs and priorities and the lists differ considerably. Yet, all unite in the drive to bring the University of Illinois to as high a place of distinction as possible. I believe the thrust of the committee's work has been centered on this quest for

¹ Letter from the President, appointing the University Study Committee on Future Programs, June 11, 1957.

excellence. At the same time, the committee has given us a clear view of continuing obligations as well as new opportunities. We are immensely grateful for both. The committee has offered specific recommendations and the rationale for them. It has also suggested priorities in educational services, a recognition that today as never before universities must make choices. The reader will find a suggested pattern of growth and an indication of intellectual resources and values at the University of Illinois. There are some detailed recommendations, involving the need to study the process of undergraduate teaching; questions of admissions policy; the importance of maintaining a strong faculty and giving it the time and facilities to do its work; the growing international interests of the University. The list and its explication are not easily summarized, nor can a summary do justice to the importance of the questions raised. It is sufficient to say here that, to its credit, the committee has not been preoccupied with minutiae but rather has been concerned to lay down broad guidelines for educational policy appropriate to a comprehensive state university in the second half of the twentieth century.

I call particular attention to the separate statements of the campuses, colleges, schools, and institutes in Appendix II. Here are provocative demonstrations of innovation at the operating level. The planning effort is University-wide and is one to be treasured in a dynamic institution. In no small way, perhaps, it has come in response to the presence and the stimulation of the University Study Committee on Future Programs. The most insistent refrain in the statements is especially encouraging; repeatedly one notes the steps being taken to broaden undergraduate and professional training through the revision and redesign of curricula. Collectively, the movement suggests a swing of the pendulum in intellectual history, a new concern for synthesis and for general education, if not wholly for their own sake, at least for a worthy end: to equip the practitioner of tomorrow to serve his profession more wisely, more efficiently. The accumulation of knowledge and the complexity of modern society demand that the highly trained person look beyond his specialty, even as he specializes. The pattern seems evident in all academic fields. If the trend is rightly marked, it will give a measure of reassurance to those who have foreseen a future of ever-narrowing disciplinary lines. Moreover, at the same time we see in this University an acceleration of research competence that brings us daily, in many fields, to the extreme frontier of inquiry. The momentum of new adventures of knowledge and the demands for new career opportunities together are expanding our capacity for distinguished service.

Flux in our academic life is dramatically evident in the plans for the University of Illinois at Congress Circle, Chicago. The stimulant of pioneering insures a fresh approach in any case; the ferment in the disciplines

will add zest to the task of developing a degree-granting urban institution. I doubt if any of us fully appreciates as yet the impact of the educational service to come from this new venture in Chicago. At a time of great demand for educational opportunity, the nation's second metropolis will have its first degree-granting public university. The thoughtful spirit in the planning may be inferred from the report of the plans for Congress Circle in Appendix II.

Achievement in implementing educational planning is based upon a quality too easily overlooked—the spirit of dedication in academic life. The committee was not asked to ruminate on this point but we can be sure that it was assumed. The personal sense of service must not be lost in any university, however large and complex, however cosmopolitan its intellectual endeavors. I believe this fundamental concern is suggested when the committee reports “a wide-spread agreement in the faculty that the University must make every effort to accommodate all applicants who are at or above the level where students begin to concentrate in a field of learning or profession and who are able, well-prepared and serious in their intent to learn.”

In one overriding particular, the contribution of this committee already has been well established—as a catalyst in internal deliberations. The committee's studies, coupled with the advice and cooperation of the faculty and administration, have accelerated a variety of new procedures and policies. The report covers these items and describes as well a mechanism for improvement in which all feel some satisfaction. I refer to the president's conferences, a device we have borrowed and adjusted to our own setting. Entirely unofficial and informal, the conferences have succeeded perhaps because of their informality. The explanation may be that a forum, representing different areas and levels, can serve to school us all in the difficult task of general planning and thus benefit the entire University. As the committee states, “It is one thing to decide upon the chief responsibilities and a desirable pattern of growth for the University; it is quite another to adhere to and achieve these goals under the pressure of the many needs and desires, internal and external, that seek support. . . .” One of the proved effects of planning is that those who participate become better informed in the process.

Indeed, it should be understood that this report is a companion effort to the concurrent physical planning which has received so much public notice during the last five to ten years. Physical planning is vitally important, but the thorough student of higher education knows that educational planning is the heart of the enterprise and, insofar as the committee is concerned, has been going on since 1957.

It is not planned to place this report before any official body for adoption as a whole; instead it will serve as a working paper for discussion,

stimulation, and information. Specific recommendations that may flow from it—as some have already—will be reviewed in legislative and administrative channels. But the over-all report will have the force of informal acceptance and the logic and persuasiveness of its ideas.

The report may also serve as an instrument of professional communication to educational leaders in Illinois and elsewhere. At a time of heightened analysis of higher education, here is a document worth the attention of all who are concerned.

DAVID D. HENRY
President

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Introduction

The future programs of the University of Illinois must rest to an important extent upon decisions as to the future role of the University within the state's total program of higher education. Important aspects of statewide planning have recently been undertaken by the Illinois Higher Education Commission (1955-57)² and the Illinois Commission of Higher Education (1957-61).³ The Illinois Board of Higher Education, established by an act of the General Assembly in 1961, will undoubtedly exert substantial influence over developments in the state universities in the years ahead. The University itself should continue to contribute actively to studies and plans for meeting the educational needs of the state as a whole.

Illinois must provide opportunity for higher education to all of its youth who have the preparation, ability, and serious intent to proceed beyond high school. It may reasonably be assumed that the state will have the resources required. Yet the financial cost will be so great that the state's total program of higher education must be planned efficiently so as to achieve its ends at the least cost consistent with high quality. Efficiency and quality demand that the role and function of each publicly supported institution be well defined and differentiated. Each institution must be strongly encouraged to do its best to fulfill its chief or unique responsibilities and to devote resources to those responsibilities which it shares with other institutions only to the extent justified by the total needs of the state. State-wide planning has not proceeded far enough to give

² *Illinois Looks to the Future in Higher Education* (Report of Higher Education Commission to the Governor and Legislature of the State of Illinois, 1957)

³ *Annual Reports* of the work of the Commission in 1958, 1959, and 1960 have been published. The *Report of the Committee to Recommend a State Plan for Higher Education in Illinois, July, 1960*, appears in the *Annual Report, 1960*, of the Commission of Higher Education; pages 130-155.

a clear prospect of the institutions that will be available to carry on higher education nor has it clearly defined the particular role of the University of Illinois.

The University Study Committee on Future Programs is necessarily limited to study and recommendations on the role and plans of the University of Illinois. The committee believes that the essential first step is general agreement within the University on its chief responsibilities and aims and on the related question of the size and structure of the student body in the years ahead. These were the principal subjects of the *First Report* of the committee, submitted in 1958.⁴

To a large extent, the *First Report* was based upon extensive and thoughtful response by the faculty to a letter asking for opinions on these subjects. The report was discussed at the President's Faculty Conference in June, 1958, and the conference approved the aims and responsibilities of the University as set forth in the report and the proposed pattern of growth, "assuming commensurate growth on the part of other educational institutions in Illinois." In subsequent president's faculty conferences, the recommendations were used as a frame of reference in discussing a number of basic issues which will determine the success of the University in meeting its responsibilities. Thus, in origin and in subsequent discussion, the *First Report* is believed to reflect widely held faculty opinion as to the role of the University in higher education and the desirable pattern of growth of the University.

⁴ *Abstract of Proceedings of the President's Faculty Conference—on the First Report of the University Study Committee on Future Programs, June, 1958.*

Review of the *First Report*

CHIEF RESPONSIBILITIES AND AIMS OF THE UNIVERSITY

What, in terms of functions, are the chief responsibilities of the University of Illinois? All educational planners in the state recognize that if all qualified high school graduates in Illinois who will seek higher education are to have it, the base of undergraduate education must be greatly expanded. Junior colleges must be expanded in number and size; the Chicago branch of the University must be greatly enlarged and its program expanded as rapidly as circumstances permit; other public and private two- and four-year colleges and universities must expand their capacities and educational programs. On the other hand, the expansion of advanced education and research in the fundamental fields of learning and in the professions is also of the greatest importance to the state and nation. It may be assumed that for the next decade at least, the University will be the principal public institution in the state with comprehensive programs in these areas. In view of these circumstances, the committee proposed the following as the chief functions of the University in the decade ahead:

1. Teaching, research, and scholarly and creative activity in the fundamental fields of learning.
2. Teaching and research in professional and occupational areas which are closely dependent upon the fundamental fields of learning.
3. Liberal education of able young men and women who do not intend to become highly trained specialists and, to the extent possible, of students aiming toward specialized or professional training.
4. Vocational training in fields which are of substantial and wide importance to the state and nation and which require four-year programs including sound preparation in the fundamental fields—and which the University is uniquely or best fitted to provide.

5. Extension education and essential public services which require the kinds and level of expertness represented in the faculty of the University.

The fundamental fields of learning are mathematics, the biological and physical sciences, the humanities, the fine arts, and the social sciences. Emphasis on these basic fields is the common feature of the five functions of the University. It is this feature which can give the University a unity in the pursuit of learning, even with its great diversity in fields of specialization and its large numbers of students and faculty.

The order in which the functions are listed corresponds to the relative degree of the University's responsibility in fulfilling them. Thus teaching and research in the fundamental fields are placed first because they underlie all of the University's essential work. In a number of professional fields, the University has a unique responsibility among the state-supported universities. Liberal and vocational education, on the other hand, will be shared among a wide and varied group of colleges and universities, as will extension education and public services. It was not the committee's task or intention to evaluate the relative importance of these five functions to the people of the state but rather to identify the relative responsibility of the University in fulfilling them. The total task of meeting these five important objectives, and others, will be shared among all of the higher educational institutions of Illinois, public and private.

There are a number of reasons why the fundamental branches of learning should be given high priority in the University. The creative advancement and dissemination of knowledge in the basic fields is crucial to the scientific, economic, and cultural strength of the state and nation; a university provides the best environment for these purposes; the University is the only public institution in the state which is broadly equipped for advanced instruction and research in the fundamental fields. Further, strong faculties and programs in these fields are essential to sound education and research in the applied and professional areas. Finally, graduate instruction and research is the source of the college and university teachers who will carry on the dissemination and further advancement of knowledge.

The times call for increased recognition in the University of the role and importance of the fundamental fields of knowledge. Illinois and the University have developed over the years from a central concern with meeting pressing, immediate needs for "practical" training to the point where the long-range needs of a complex society must also become a primary consideration. It follows that the University must increase its strength in faculty and facilities in the fundamental fields and in their application to the professional fields. In a number of fundamental areas outstanding departments have been developed, but the University's strength is not as great in all areas as it should be in comparison with that

of other American universities of similar resources and size. As additional faculty is recruited in the fundamental fields, strong emphasis should continue to be placed on building a faculty distinguished in research and teaching rather than solely on the need to increase the staff in proportion to the over-all enrollment.

The increase over the years in numbers of professional, occupational, and vocational curricula reflects the increasing degree of specialization in industry, the health professions, education, and other fields. Few graduates, however, find their life work in precisely the field in which they specialized in the University. Furthermore, the kinds of special technical knowledge needed in most occupations change markedly within a generation or even sooner. Graduates who have been in professional positions requiring a high degree of judgment and adaptability to new problems usually look upon college studies in the basic knowledge underlying the profession as more useful than the specialized courses in its techniques. For these reasons, the University's professional and occupational curricula should be closely connected with the arts and sciences from which the applied fields stem. In research, some of the investigations carried on in a professional college may well be in a related basic field: research in the colleges of Medicine or Agriculture may be fundamental biochemistry; in Law, history or government; in Engineering, physics; in Business, economics.

Thus, it is the University's responsibility to provide professional education in those needed areas which by nature depend upon and in their programs stress the fundamental bases of the subject. By the same token, kinds of vocational training which do not depend strongly upon, or need not be taught in a way which relates them closely to, the basic fields should be curtailed or established elsewhere at centers such as the junior colleges in regions where there is need for such training. One example is the training of engineering technical aides, who are needed in large numbers in industry. A technical institute cannot properly be operated as an integral part of a college devoted primarily to the education of highly trained engineers. The University should assist in the planning of such sub-professional programs in other centers. It should also train teachers for them in fields where it is clear that teacher preparation should include study in the subject matter of the profession, at the level of the first-degree curricula in the professional field.

GROWTH AND SIZE OF THE UNIVERSITY IN THE YEARS 1960-70

The committee in its *First Report* also proposed a pattern of growth for the student body at Urbana-Champaign which is consistent with the premises underlying its recommendations as to the chief responsibilities of the University: (1) That continued improvement and expansion in

education and research at advanced levels is vitally important, (2) that for the next decade the University will be the principal public institution in the state which can assume major responsibility for such developments. and (3) that kinds and levels of higher education which can readily be shared should be distributed among appropriate institutions.

In the fall of 1957-58, the distribution of the student body at Urbana was approximately as follows:

Freshmen and Sophomores	7,500
Juniors and Seniors, Unclassified	7,500
Graduate, Law, Vet. Med. students	3,900

The ratio of freshmen-sophomores to more advanced students was 7,500:11,400 or about 2:3.

The specific proposal of the committee was that the University continue to accept all well-qualified applicants at the junior and higher levels that the faculty and facilities can accommodate but limit by selective admission the freshman-sophomore enrollment to approximately the 1957-58 level. Predictions at that time, based on maintaining the current distribution among colleges and universities in relation to population, put the number of advanced students at Urbana in 1969 at 19,000. It was proposed that in round numbers the planning target for 1970 should be 8,000 freshmen-sophomores and 20,000 advanced students, a ratio of 2:5 as compared with 2:3 in 1957.

The committee foresaw that the enrollment and proportion of underclassmen could be allowed to increase in the immediate future but believed that they should be reduced as the numbers of advanced students increased, through transfer to the University for specialized education, and as the opportunities for high school graduates broadened, particularly in the junior colleges. The actual trend of enrollments from 1957 to 1961 will be discussed in a later section.

The justification for the proposed distribution lies in the advantages and difficulties in the operation of a large university at the different levels of instruction. The principal advantage of a large, well-supported university is that it can embrace the diverse fields of learning with relative completeness and excellence. First-class library, laboratory, and other facilities for advanced study and research can be justified economically if the enrollment is sufficient to utilize them fully. Extensive opportunities for research and scholarly work, with healthy cross-fertilization among related fields, can attract an outstanding faculty and student body. Students and faculty can enjoy a wide range of cultural activities. Such advantages can be realized with relative economy by an increasing number of students as a university grows.

Eventually, however, as a university grows, the blessings of growth

are offset by the physical and psychological disadvantages of sheer size. The point at which this happens depends on the rate of growth and can be deferred by skillful planning and assurance of resources to carry out plans. Conditions on and off the campus that accompany too-rapid growth make it difficult to attract the first-class faculty and students who are sought by many universities.

There is, nevertheless, a wide-spread agreement in the faculty that the University must make every effort to accommodate all applicants who are at or above the level where students begin to concentrate in a field of learning or profession and who are able, well-prepared and serious in their intent to learn. The number of fields of specialization is large. If each has adequate facilities, a faculty that covers reasonably well the branches of the field, and a healthy but manageable enrollment of advanced students, the total number of such students in the University can become very large without massive enrollments occurring in any one area of advanced education. Variation in demand among fields will cause pressures here and there. In general, however, the University should seek the resources to provide education at the advanced levels for all well-qualified students who apply. In some professional fields, the capacity may have to be limited to numbers that are deemed to be the state's fair share of education in those fields.

At the freshman-sophomore level the situation is different. Common elements in educational programs lead to large enrollments in relatively few courses—for example in English, mathematics, biology, chemistry, economics, psychology, and certain languages. It is not wise, in any field, to divide the faculty into one group which teaches only advanced courses and one which teaches only freshmen. As far as practicable, all members of a department should be concerned with both basic and advanced instruction, for the benefit of the students and the morale of the staff. With unrestricted enrollments of underclassmen, however, the number of sections in introductory courses in a department mounts by the score and the number of staff needed to teach them becomes much greater than the number needed for the advanced courses and the direction of graduate students. Graduate student teaching assistants are usually added to teach the sections. The much-maligned assistants often do a superior job, especially if the numbers required are small enough to allow careful selection and if they can work in close association with experienced teachers—a few to each teacher. The question is one of proper balance between numbers of senior and junior faculty. The present situation in a number of large departments will be discussed in more detail in a later section of this report. The balance will shift in the right direction if over the next decade the enrollment of advanced students increases more rapidly than that of freshmen and sophomores and if the neces-

sary, additional senior faculty in the large departments in the basic fields participates in both elementary and advanced instruction.

Restriction of freshman-sophomore enrollments should be accomplished by increasingly selective admission in order to limit the range of abilities of students in the large introductory courses. A faculty which is expected to devote a major effort to advanced instruction and research cannot also be expected to devote to weak, ill-prepared, or uninterested students the special attention which is necessary to enable them to get much from courses of university standard. On the other hand, a large university holds special and stimulating advantages for the able and well-motivated freshman who can himself assume a substantial amount of responsibility for learning.

Recommendations

The proposals of the committee with respect to the growth and structure of the student body at Urbana-Champaign were summarized in five recommendations, here somewhat abbreviated:

1. At the junior-senior and graduate levels in the fundamental fields of learning and in professional and occupational fields closely dependent upon the basic fields, the University should endeavor to secure first-class faculty and facilities to accommodate all able and well-prepared students who apply.

2. At the freshman and sophomore levels, the University should accelerate efforts to develop counseling and admissions procedures by which to select students who have the ability and maturity to succeed in a large university with high standards. As the need to limit enrollment develops, tested procedures can then be applied to maintain an appropriate balance between the tasks of teaching large (but limited) numbers in the relatively few basic introductory courses and of teaching large numbers of more advanced students widely distributed among the diversified fields of specialization.

3. The physical expansion of the University should be planned to accommodate 25,000 to 30,000 students at Urbana-Champaign by 1969, but campus planning should permit further increase of enrollment in case it should prove to be necessary or desirable.

4. The University should participate actively in an advisory capacity, but with suitable staff and organization, in the development and strengthening of the junior colleges, to the ends that all high school graduates who seek to continue their education will have the opportunity to do so and that qualified junior college graduates who wish to transfer to the University will be able to prepare fully for more advanced study.

5. The University should press forward on the expansion of the Chicago Undergraduate Division into a four-year branch of the Univer-

sity. If independent and objective study of the needs of higher education in Illinois and of the developments in other public and private universities and colleges in the state point to the necessity for additional two- or four-year branches of the University at centers other than Chicago, the University should be willing to establish them.

Some Conditions for Attaining the Aims of the University

It is one thing to decide upon the chief responsibilities and a desirable pattern of growth for the University; it is quite another to adhere to and achieve these goals under the pressure of the many needs and desires, internal and external, that seek support from resources available to higher education in the state. The committee has discussed since its *First Report* the conditions under which the University can best meet its responsibilities in terms of faculty, students, and facilities, the principal elements on which the strength and usefulness of the University rest. As these discussions proceeded, the committee was pleased that the second and third president's faculty conferences were concerned with the same kind of questions. The committee is glad to refer to and draw upon the conclusions of these representative faculty conferences to point up the policies which it believes must be followed if the University is to meet its chief responsibilities.

THE QUALITY OF THE FACULTY

Success in maintaining the highest standards in the selection and retention of faculty will determine, more than any other factor, the stature and usefulness of the University a decade hence. The present faculty is a distinguished one, equalled in competence by only a few other comparable faculties. It provides a strong and attractive base on which to build. But in a decade the expansion of enrollment at Urbana-Champaign, plus the turnover due to resignation and retirement, may well require the appointment of a number of faculty greater than the number in the present faculty. The expansion of enrollment and faculty at the Chicago branch will be relatively much greater. The market will be fiercely competitive. The great problem is to take advantage of the necessary expansion and replacement to increase the over-all excellence of the faculty and thereby the work of the University.

Recommendations

The second faculty conference, in 1959, agreed in its report⁵ on the following resolutions on policies of selection and retention of the faculty:

Resolution 2: The University must recruit and vigorously support persons of scholarly distinction for its faculty. Basic to the evaluation of scholarly distinction is the judgment given by the academic community, both on and off the campus, with respect to the work produced by the faculty members and to the students they train and teach.

The conference recommends that the University establish policies governing promotions which include the following features:

(a) A principle of specified limited periods in rank, with promotion or termination of service for non-tenure appointments. The policy when formulated should not be made retroactive.

(b) Promotion to and within tenure ranks should involve, in addition to departmental appraisal, the judgment of the outside academic community.

(c) While it should be a primary goal in the University's policy regarding promotion to increase the proportion of distinguished scholars on the faculty, it should also be the policy to give tenure and promotion to faculty members giving able and imaginative professional service to other types of University programs.

Resolution 8: The conference approves the efforts of the administration to secure adequate buildings and facilities. It is urged that efforts be continued to this end. Indispensable elements in maintaining a faculty of quality are, among others, adequate space for study, research, instruction of class, and other teaching activities. In addition to these physical facilities, further improvement of our libraries and their services and greater availability of secretarial services are needed.

In planning University facilities, the promotion of greater faculty unity and informal interdisciplinary contacts should be given consideration.

This committee concurs in the policies stated or implied in the above resolutions. It would add the following observations and recommendations on three critical points:

Faculty Salaries. Faculty salaries at Illinois should be competitive with those paid by the best universities to faculty of comparable ability and achievement. Minimum and average salaries in each faculty rank should be increased in order to restore an equitable relationship in income with other occupational groups in the nation. Above all, however, the University must be able and free to compete with any university, on a salary basis, in the retention or acquisition of first-rate academic talent.

Promotion. With the expanding need for faculty in the higher ranks, as the ratio of advanced students to underclassmen increases, departments will be in a better position to reward excellent performance with promotion. Assurance that promotion will be determined by perform-

⁵ *The Intellectual Climate of the University: Report on the President's Second Faculty Conference, March 13-15, 1959.*

ance rather than by longevity or turnover in a fixed number of positions will help to attract and hold the best young people.

The prospective scarcity of well-qualified senior staff will make it more necessary than ever for the University to develop the talent within its own ranks. Universities tend to operate on the theory that the cream will rise—that the truly talented scholar will make his genius known by his works. Though there is truth in this theory, and though no amount of hot-house cultivation will bring infertile talent into flower, sympathetic departmental leadership can greatly increase the rate of development of younger staff members. Teaching and other assignments within the department must allow time and opportunity for independent scholarly work. One of the chief marks of excellent departmental administration is the rapidity and frequency with which assistant professors develop high competence and recognition in their own specialties, whether these be teaching, research, or service.

The basis on which staff members are promoted to tenure ranks, as recommended by the faculty conference in Resolution 2 above, should be much the same in all areas, with conscious modification to fit special circumstances, and should be made clear to all concerned.

Working and Living Conditions. The basic attractions of the University must be augmented by continual attention to those benefits which help to make a position in one university more attractive than in another. A number of important factors are mentioned in Resolution 8 of the second faculty conference. In addition to these, retirement and insurance benefits will need continuing attention and improvement. Availability of good rental housing and contribution to moving expenses may be crucial in attracting a new faculty member from a distance. The value of a private office, however small, to the effectiveness of teaching and research needs continued emphasis. A private office requires a capital investment equal to about six months' salary of a young faculty member, but it may be a principal factor in the quality of his teaching and scholarly activity and in his satisfaction with his job over a period of many years.

The second faculty conference also discussed at length and made recommendations on means for improved communication within the University, on interchange among the three branches of the University, and on the encouragement of interdisciplinary and interdepartmental approaches to teaching, research, and public services where appropriate to the work of the University. These are clearly among the important conditions for meeting the aims of the University.

A number of steps have been taken toward meeting the conditions on which the quality of the faculty and its work depend, of which the following are important examples:

1. The approval by state-wide referendum of the Universities Bond Issue in November, 1960, assures that much can be accomplished in the next few years toward improving the physical conditions under which the faculty and students work. This is spectacularly true for the branch of the University at Chicago.

2. The policy that a limited period of appointment of faculty in non-tenure ranks will be followed by termination or promotion has been clearly announced in the College of Liberal Arts and Sciences. The policy is outlined in that College's statement on long-range planning in Appendix II. Discussion has revealed that circumstances vary among divisions of the University to an extent that a considerable degree of flexibility is required in the application of a so-called up-or-out policy. The aim should be to establish a general University standard and to place the burden of justifying the exceptions on departments where special circumstances exist that require them. A related problem is that of establishing a better framework than now exists for professional appointments in categories such as professional librarians, research engineers, and business managers. Such positions are now tied sometimes to academic ranks and sometimes to nonacademic classifications. Consideration should be given to establishing a separate employment group of high-level professional personnel in which excellent service can be recognized by tenure and promotion through appropriate ranks unrelated to academic ranks.

3. The provost has initiated a new procedure for the consideration of promotion in rank which will lead toward the application of a University-wide standard. Recommendations approved by the dean of a college are referred to a University faculty committee for an opinion on merit before final action is taken by the University administration.

4. Recent major developments to promote interdisciplinary programs of education and research include the School of Life Sciences, established in 1959 to coordinate work in biological sciences in several departments of the College of Liberal Arts and Sciences, and a University committee to coordinate and stimulate intercollege study and research in biology; the Office of Community Development to plan a program of research and public service which will bring more effectively to bear on urban problems the disciplines of political science, sociology, geography, and economics; the proposed Materials Research Laboratory for basic study and research in the solid state sciences through the combined efforts of faculty and students from the Departments of Physics; Mining, Metallurgy, and Petroleum Engineering; Chemistry and Chemical Engineering; Ceramic Engineering; and Electrical Engineering.

Finally, it may be remarked that in faculty and committee discussions on the quality and effectiveness of the faculty emphasis tends to be placed mainly on conditions and policies for which departmental and higher

administrative officers have the principal responsibility. The other side of the coin is that the accomplishments and stature of the University depend first and last on what its faculty and its students actually do. A faculty of great ability working under the best of conditions does not in itself assure the greatness of a university. The University of Illinois will be known by its works and these rest not only upon the ability but also upon the spirit, initiative, and efforts of its faculty and its students.

THE UNDERGRADUATE STUDENT AND HIS INSTRUCTION

In recent years the University has become increasingly concerned about the characteristics of the undergraduate as a student and the quality of his instruction. The University has established procedures for selective admission of freshmen and for progressive admission of both freshmen and transfer students to insure that available places go to the most promising students. Individual colleges have increased their subject matter requirements.

A University program to attract and provide appropriate special instruction to gifted students has been established and given excellent faculty and administrative leadership. The program includes the James Scholar program, recognition of the Advanced Placement Tests, early admission of outstanding high school students to University courses, and departmental and college honors programs for superior students.

New procedures for the advising of all undergraduate students by the faculty have been established in recent years to provide systematically the opportunity for the individual student to discuss his academic program and goals with a member of the faculty.

Undergraduate instruction is under steady discussion and criticism by faculty and students: it was a principal subject of the president's faculty conferences in 1960 and 1961; the College of Liberal Arts and Sciences has set up a committee on the improvement of teaching; the American Association of University Professors made a study and published a report on the quality and recognition of teaching in the University, with specific recommendations; the Student Senate is making an organized study of the same subject. In 1961 an Office of Instructional Research was established and associated with the office of the provost.

The important question is, what effect are these efforts and others having on what goes on in the classroom; on the determination of instructors to understand their subjects deeply and to present them well and on the students' determination to learn, even when the teaching does not reach an ideal standard? It is safe to conclude from the numbers of faculty and administrators who have expressed themselves firmly on the importance of good classroom teaching that it is a major concern of a large part of the faculty. It is also clear that, in a university

with extensive and comprehensive responsibilities in advanced education, research and public services, the importance of good classroom teaching of underclassmen does need to be steadily reiterated.

The Entering Undergraduate Student

A subcommittee of the Future Programs Committee, with Professor L. J. Cronbach as chairman, presented a study paper. "The Entering Undergraduate Student," at the President's Faculty Conference in March, 1960. The paper is presented here as Appendix I. It restates the committee's point of view as to the University's role in a sound state system of higher education and the bearing that this role has on the kinds of students who should be encouraged to enter the University. It also deals with the academic abilities and performance of students who have recently attended the University. Through its analysis of student characteristics and University practices it attempts to point the way to continued improvement in procedures for recruiting, selecting, counseling, and retaining the kinds of students whose characteristics match the role and aims of the University.

The paper contributed to decisions with respect to new freshman admissions requirements adopted in 1960, which will be described in a later part of this report.

Freshman-Sophomore Instruction

Perhaps the most frequent criticism of the large university today is that the teaching of freshmen and sophomores is not as good as it should be, or could be if the professors would make it a main concern and put their thought and best efforts into it. Illinois, at the Urbana-Champaign campus, has not escaped such criticism. Indeed some of its strongest expression has come from the faculty itself.

The criticism of freshman-sophomore teaching is often leveled at the basic disciplines in which large numbers of underclassmen build the foundation for advanced study in a great variety of fields. The purpose of this section is to describe qualitatively and quantitatively the tasks of the departments in these fields and to point out measures which will improve the prospects of their doing in a superior way the wide range of tasks which they must do.

The departments in the fundamental fields have, in addition to basic or elementary teaching, a major responsibility in upper division and graduate teaching, and in the advancement of knowledge and the education of the most talented students to carry on the process. Indeed, the most commonly used measure of a university is the excellence of its graduate education and research in the fundamental fields. The teaching faculties at professorial rank in these departments are small compared with the total number of teachers needed for all levels of teaching. In

TABLE 1. COURSE REGISTRATION DATA AND FULL-TIME EQUIVALENT STAFF FOR SELECTED DEPARTMENTS AT URBANA, SEMESTER I, 1960-61

Department	Teaching Staff—FTE			100-Level Courses		Advanced Courses		Registration		Percent of Total Registration 100-Level Courses
	Ast. Prof. Assoc. Prof.	Instructors	Total Including Assistants	Number	Total Registra- tion	Number	Total	Total	Thesis Research	
Chemistry	27.5	7.8	89.9	13	2954	61	1349	203		68
Economics	23.4	5.8	38.1	8	2336	41	904	29		72
English Literature†	33.1	5.8	44.3	11	2287	53	1244	53		64
French	10.2	2.7	27.8	5	1354	18*	573*	5		70
History	15.1	4.9	27.5	6	1752	37	939	37		65
Mathematics	43.9	9.2	96.8	14	4977	53	2464	29		67
Physics	28.3	...	63.1	4	1603	22	943	59		63
Political Science	10.7	3.0	16.7	5	1125	22	620	24		64
Psychology	24.5	...	35.0	5	1629	29	391	66		65
Zoology	13.6	...	30.5	4	1133	16	399	39		74
Totals	230.3	39.2	469.7	75	21150	352	10326	534		67

† Excludes Rhetoric.

* Includes French 400 and 401 (beginning courses for graduate students).
Registration and teaching staff data provided by the Bureau of Institutional Research.

the selection of the members of the faculties, therefore, ability and promise for advanced teaching and research must be given great weight; otherwise mediocrity is inevitable. Since the professors have compelling responsibilities and many students at advanced levels, in consequence they can do only a small fraction of the freshman-sophomore teaching, except for that which takes place in large lecture sections; thus, most of this teaching is done by instructors and graduate student assistants.

The critics sometimes describe the situation as a flight by the professors from undergraduate to more advanced levels of teaching. If this be true at Illinois, the statistics to be given shortly will show that in their flight the professors have found themselves with larger numbers of advanced students than are considered acceptable for good education.

To demonstrate the situation by example, some data on numbers of faculty and students in ten large departments at Urbana were obtained from the Bureau of Institutional Research and are collected in Table 1. The departments are each in a fundamental field; their responsibilities range from freshman courses to the most advanced education and research. Each enrolls more than 1,000 students in its freshman-sophomore (100-level) courses and these students comprise about two-thirds of its total registration.

The table lists for each department as of the first semester in 1960-61 the number and distribution among ranks of the faculty; the number of 100-level courses and registration therein: the same for advanced courses and thesis research; and the percentage ratio of registration in 100-level courses to total registration. The numbers vary among departments but the situation is sufficiently uniform that it will be described in terms of the final row of totals and averages for the ten departments.

The ten departments enrolled 21,150 students in 75 100-level courses, an average of nearly 300 students per course. From data not given in the table, 67 full-time equivalent (FTE) professors (assistant professor or above) were assigned to these courses, or somewhat less than one per course.

The ten departments also enrolled 10,326 students in 352 advanced courses and 534 students in individual thesis research. These students were taught by 168 FTE professors with help from assistants; on the average each professor taught two courses enrolling 30 students each, and supervised three thesis students.

The total registration in the ten departments was approximately 8,000 FTE students, assuming a registration of four courses per FTE student. The total faculty in the ten departments, including assistants, was 470 FTE. The ratio of students to faculty was thus about 17 as compared with a university average of 12 on the Urbana-Champaign campus.

These data show that under the present circumstances, in these and

other large departments in the basic fields of learning, the typical student cannot get much individual or small-group attention from faculty of professorial rank, whether he is in 100-level or advanced courses. No permissible shifting of professors among levels of teaching can change this situation substantially. Unfortunately, the situation has been getting worse in recent years in the essential courses in fundamental fields, and for two reasons. First, the freshman class has increased by 50 per cent between 1957 and 1960; the increment has been accommodated largely by adding sections taught by assistants. Second, some of the increase in senior staff within departments has been for the purpose of expansion into important new areas of advanced study which require the full attention of the new faculty for proper development, so that the added faculty does not contribute proportionally to teaching the expanding enrollment in beginning courses or in the basic advanced courses.

Recommendations

With this numerical analysis before us, it is possible to see what must be done to improve the situation. Though the problem in each department must be examined in the light of its special circumstances and needs, the following measures need to be generally applied:

1. Recognize that the large departments in the fundamental fields, though they may appear swollen in size, are understaffed in relation to their numbers of students and to the wide extent and central character of their responsibilities in the University. Expand the senior faculty to reduce the ratio of students to faculty. Recognize that, though new teaching techniques may improve freshman-sophomore instruction, they are not going to reduce the number of professors needed where, on the average, there is one professor per course enrolling 300 students.

2. Employ senior faculty who have a responsible interest and willingness to participate in the teaching of the freshman-sophomore courses, as well as the ability to teach advanced courses and contribute in substantial ways to the advancement of knowledge.

3. Give increased attention to the selection, encouragement, and development of graduate student teaching assistants and to the best way to use their developing talents as teachers. Act on the basis that a major responsibility of the University is to develop qualified college and university teachers.

4. Deny admission to freshman applicants whose ability, as indicated by previous records and tests, is such that they have small prospect of completing successfully a four-year course. Recognize that a faculty whose responsibilities include advanced teaching and research cannot be persuaded to give its best efforts to beginning classes with a large proportion of students who can never properly qualify for upper division studies.

Take advantage of the fact that, on the other hand, the teaching of able underclassmen who are determined to learn is a very satisfying experience for most university professors.

Developments in Educational Plans and Programs Since the *First Report*

LONG-RANGE PLANNING BY COLLEGES

Let us see what has been happening in the University since the committee was appointed in 1957. In our original letter to the faculty, the committee asked for statements on plans of departments or colleges for new teaching and research programs, changes in emphasis or approach, measures needed to maintain or expand existing programs. Many replies were received but no attempt was made to include a discussion of specific future plans in the *First Report*, which was devoted to the more general questions reviewed in the first section. It is a pleasure to report that a number of departments and colleges have themselves undertaken since 1957 extensive re-examination of their objectives and programs, perhaps to some extent stimulated by the discussions generated by the committee's inquiries and its *First Report*. This is as it should be—if it is to be healthy, the evolution of educational policy and program must originate in the faculty.

As this report was being prepared, all of the major colleges and divisions of the University were asked to prepare brief statements to be included in a separate section or appendix. It was suggested that a statement might include an outline of the scope of the division's work, its recent developments, and its plans for future development. A collection of such statements appears as Appendix II. It describes the educational directions of the University as seen in its working centers of learning.

The committee has not considered it a part of its task to pass judgment on the statements by the colleges and divisions. It is apparent from the statements, however, that throughout the University much thought is being given to future programs and that the plans are substantially consistent with the spirit of the recommendations made by the committee in its *First Report* with respect to the aims and responsibilities of the University.

Particular attention is called to the statements on long-range planning by the Chicago Undergraduate Division and the Chicago Professional Colleges. Educational planning in these divisions has many features in common with planning for the future of the Urbana-Champaign campus. There are, however, many different and special problems. The Chicago Undergraduate Division, in moving to a four-year program on a new campus, is undergoing a transition in many ways as complex as the establishment of a new university. Decisions of long-range commitment and importance are being made in organization, in selection of faculty, in educational program, in the physical design of the campus, and in the mission and aims of the institution. The report from the Chicago Professional Colleges covers comprehensively their recently instituted and proposed future programs. A particularly noteworthy development was the establishment in 1959 of an Office of Research in Medical Education with financial aid from the Commonwealth Fund.

NEW PROGRAMS APPROVED BY THE URBANA-CHAMPAIGN SENATE 1957-61

One way to visualize the trend of new educational programs and policies on the Urbana campus since 1957 is to review the relevant actions of the University Senate. All new degree programs, all major revisions in present curricula, and all changes in admission and graduation requirements must come before the Senate for approval and transmission to the Board of Trustees for final action. The following actions recorded in the minutes of the Urbana-Champaign Senate list new educational programs which have been put into effect in the period 1957-61. They are grouped by category rather than in chronological order, but the year of each action by the Senate is given.

NEW CURRICULA AND DEGREE PROGRAMS

<i>Graduate Programs Approved</i>	<i>Degree</i>	<i>Year</i>
Accounting Science	M.A.S.	1958
Anthropology	Ph.D.	1958
Astronomy	Ph.D.	1957
Biophysics	Ph.D.	1957
Chemical Physics	Ph.D.	1960
Comparative Law	M.C.L.	1959
Dance	M.A.	1959
Finance	M.S.	1957
"	Ph.D.	1959
Home Economics	Ph.D.	1959
Latin American Studies	Grad. Minor	1960
Linguistics	M.A., Ph.D.	1960
Marketing	Ph.D.	1960
Nuclear Engineering	M.S.	1958
"	Ph.D.	1960
Russian Language and Area Studies	Grad. Minor	1957

	<i>Degree</i>	<i>Year</i>
Russian Language and Literature	M.A.	1957
“ “ “ “	Ph.D.	1961
Veterinary Medical Science	Ph.D.	1957
<i>Undergraduate Programs Approved</i>		
NEW CURRICULA		
Agricultural Industries	B.S.	1959
(Agriculture and Commerce)		
Agricultural Communications	Major	1960
(Agriculture and Journalism)		
Crafts (Art)	B.S.	1959
Engineering Mechanics (TAM)	B.S.	1957
Forestry (Agriculture)	B.S.	1958
LAS—Engineering Combined	B.A. and B.S.	1958
(Five-Year Program)		
Russian Language and Area Studies	Major	1960
CURRICULA SUBSTANTIALLY REVISED		
Civil Engineering	B.S.	1959
Chemical Engineering	B.S.	1958
Electrical Engineering	B.S.	1957
Engineering Physics	B.S.	1961
Floriculture	B.S.	1958
General Engineering	B.S.	1959
Home Economics	B.S.	1958
Mining, Metallurgy, and Petroleum Engineering	B.S.	1959
Music	B.M.	1960
Physical Education for Men	B.S.	1960
<i>New Departments or Educational Units</i>		
Department of Anthropology		1959
Department of Russian Language and Literature		1959
Graduate School of Business Administration		1959
School of Life Sciences		1959
Center for Advanced Study		1959
Program for Superior Students		1958

What can be said about these new programs in terms of the guidelines for the future educational programs of the University as proposed by this committee in its *First Report*?

In the first place, the large number of new programs established in the short space of four years illustrates dramatically the increasing diversity of opportunities for specialization at the advanced undergraduate and graduate levels. Each new program must pass a series of careful scrutinies before final approval. It may be said with certainty that the proponents of each new program could demonstrate an urgent and expanding need for more persons highly educated in the field. The point is that the University can readily diversify in many needed directions on the basis of its present structure and competence and is in many cases the only public

institution in the state prepared to move naturally and readily into the new areas; and furthermore that such developments have a higher priority among the University's responsibilities than has a great increase in its capacity to accommodate freshman and sophomore students in the preparatory work in the underlying basic subjects. If this principle can be recognized and held, the student body will shift toward a greater proportion of advanced students as more and more students transfer to the University for advanced specialized education.

A second observation is that the new graduate programs are about equally divided between fundamental and applied or professional fields of study. In most of the latter, well-conceived programs of teaching and research will depend strongly upon the fundamental branches of learning. In one graduate program—dance—and one undergraduate program—crafts—the emphasis is on the cultivation, performance, and teaching of creative arts. The undergraduate programs are a mixed lot: they include variations in agricultural education which reflect problems and developments in the science of modern agriculture; a curriculum in engineering mechanics, a science which underlies several professional fields of engineering; an elective five-year curriculum in engineering and liberal arts which provides a specific program by which the engineering student can enhance his liberal education; and a major for liberal arts students in Russian language and area studies.

The list of revisions in present curricula reflects most prominently an overhauling of curricula in the College of Engineering. The trend here is to introduce a greater unity into engineering education with increased emphasis on mathematics and the underlying engineering sciences and with fewer specialized options in each department. In addition to the listed revisions in curricula, which include only those sufficiently extensive to require Senate action, there has been a continuous, unsung revision of many of the courses taught throughout the University, to bring material up to date and to improve presentation. The rapid obsolescence of the course outlines deposited in the Provost's Office is notorious. Indeed the extent and especially the nature of the evolution of courses throughout the University is undoubtedly a most significant measure of the intellectual health of the institution.

Finally, the list of new educational departures includes departmental status for the expanding faculties and programs in Russian and anthropology; the establishment of a Graduate School of Business Administration in which graduate students with a variety of educational backgrounds are given the specialized training required in the modern world of commerce; and a School of Life Sciences, a center for the coordination and development of teaching and research in the biological science departments in the College of Liberal Arts and Sciences, and for the initiation

of new areas of biological research and education which do not fall naturally into existing departments.

Also included in this group are two new educational units which are intended to give encouragement and additional freedom of endeavor to selected groups of faculty and undergraduate students who have demonstrated by their achievements that they can make excellent use of such freedom: The Center for Advanced Study and the Program for Superior Students. The Center was initiated by the Graduate College to recognize and encourage distinguished research and scholarly achievement by the faculty. Its permanent members are professors of exceptional accomplishment in various fields. They remain in their departments and continue to guide graduate students in research but are not expected to do formal teaching unless they wish to do so. The associate members, selected by the permanent members, are usually younger members of the faculty selected on the basis of accomplishment and promise in research. They are appointed for limited periods during which they are freed from some of their regular duties to concentrate on research and the guidance of graduate students.

The Program for Superior Students includes the James Scholar program for identifying and encouraging gifted entering freshmen and the honors programs in various colleges and departments. Arrangements for James Scholars and other superior students include special sections of existing courses, new courses and seminars, and participation in research under faculty guidance. The development and coordination of these and other arrangements for superior students are the responsibility of the Director of University Honors Programs, with the advice of the All-University Faculty Honors Council.

On the whole the list of new programs is impressive and encouraging. At the graduate level half of the new programs are in fundamental fields. It is not surprising that at the undergraduate level most of the new departures are in applied fields—the basic fields are well covered. It is apparent from the material presented to the Senate in support of new and revised programs in applied fields that in nearly every case the intention is to put major emphasis on enduring principles and a theoretical basis rather than on an empirical approach or on the current, specialized methods of a professional or occupational field. The extent to which this emphasis is established and maintained in the development of new programs and the revision of existing programs is the measure of their appropriateness, according to the committee's view of the aims and responsibilities of the University.

GENERAL EDUCATION IN THE UNIVERSITY

The general or liberal education of undergraduates has for many years

been a subject of concern in the various colleges of the University. In the year in which this committee was appointed, 1957-58, an *ad hoc* University Committee on General Education proposed that the University Council take steps to resolve the question of the desirability of a University-wide policy on general education.

At that time, the Committee on Future Programs presented a statement to the University Council expressing its conviction that general education should, in principle, be a University requirement of all graduates. The committee did not favor a system of rigid requirements in general education. It was inclined toward a system of basic and distribution requirements which would promote the acquisition by the student of basic literacy and some insight into the ways of thinking characteristic of developed fields of knowledge outside the area of his major study, particularly in the humanities, social sciences, and natural sciences. The committee also urged that the University exercise vigorous leadership in stimulating the intellectual development of its students outside the classroom as well as within.

The All-University Committee on General Education was appointed by the University Senates late in 1958. It made extensive studies of the actual pattern of general education throughout the University and of the pattern and policies in other large state universities. It presented a final report to the Senates in May, 1962. It concluded that the University needs a thoughtful and effective general education program which will apply to every student who earns a baccalaureate degree.

The specific recommendations of the committee, which were approved in principle by the Urbana-Champaign Senate at its June, 1962 meeting, were stated as follows:

I. Changes in Graduation Requirements

The committee recommends that:

1. Effective for all undergraduate students entering the University on or after June 1, 1963, each Senate of the University of Illinois add to the present single all-University course requirement for graduation (English composition) a minimum of six hours in the humanities, the social sciences, and the natural sciences respectively. Approved sequences should be distributed over at least three years.

2. Faculties of the individual colleges take immediate action to establish sequences in each of the basic areas, subject to approval by the appropriate Senate Committee on Educational Policy.

3. After four years' experience with the above requirements, consideration be given to:

- (a) Raising the minimum in each of the three basic areas to nine hours.
- (b) Including a reading knowledge of one foreign language.

II. Establishment of an All-University Council on General Education

The committee further recommends that:

1. An All-University Council on General Education, representing all three campuses, be established. The Council should consist of the chairmen of the

committees dealing with educational policy (or the College Committee on General Education, if one is established) of each undergraduate college.

2. In order to reflect interest and support, the University Administration create an Office of General Education to be directed by an academic officer who will devote a major portion of his time to the development and implementation of a general education program.

In its final recommendation, the Committee suggested a series of functions and duties for the council and office proposed above. These were designed to encourage widely the continued study, development, and assessment of the many ways in which the faculty can enhance the liberal education of all students in the University.

A college-bound youth can accomplish a great deal toward his liberal education in a high school which has liberal education as a major aim. Toward this end, a number of the colleges in the University have in recent years established or increased specific academic subject matter entrance requirements. At least two years each in foreign language, mathematics, history or social studies, and science, in addition to at least three years of English, are now required for entrance by freshmen into most of the larger colleges.

CHANGES IN ADMISSION PRACTICES AND STANDARDS SINCE 1957

As noted in an earlier part of this report the Committee contributed a study, "The Entering Undergraduate Student," to the Faculty Conference in March, 1960. The paper appears as Appendix I. On the subject of admission practices and standards the following recommendations were made:

1. When resources of facilities and faculty limit enrollment in the University, the available places should be given to the students who appear most likely to have the ability to complete a four-year program.

2. In determining freshman admissions, rank in high school class should be the most important factor, but it should be combined with one or more other predictors of success which present and continued studies show to be significant, such as high school average, aptitude and achievement tests, and recommendations of high school principals and teachers.

3. Since studies of the performance of students at Illinois show that those who are placed on probation in their first semester are very unlikely to graduate, entrance tests which correlate well with performance in the first semester should be given substantial weight in determining admission. The recommended standard is that students whose tests indicate a 50 per cent or greater probability of their being placed on probation at the end of their first semester should be denied admission. (Probation at the end of the first semester is much more closely correlated with failure to finish a four-year curriculum than is first probation at the end of the second or third semester.)

4. In terms of rank in high school class, the immediate goal should be to bring the distribution of ability in the freshman class to 60 per cent from the top quarter, 25 per cent from the second quarter, 15 per cent from the lower half or better in all branches and colleges of the University. This standard is now met or exceeded in some colleges or categories of students in the University.

5. Continued consideration should be given to subject matter requirements for admission of freshmen. The committee endorses the proposed lifting of the University requirement for all freshmen from nine high school units in specified academic subjects to twelve units.

6. Admission of transfer students at any level should be governed by the principle that such students should fall within the same range of ability, preparation, and promise of proceeding successfully to graduation as those students who were admitted as freshmen and are allowed to proceed. The most critical level is at admission to junior standing. Since grades given by colleges are by no means uniform in their significance, serious consideration should be given to basing admission at the junior level partly on appropriate proficiency tests, particularly in areas where advanced study depends specifically on basic preparation in the first two years.

Shortly after the above recommendations were developed, the University Committee on Admissions, in June, 1960, secured the approval of the University Senate and the Board of Trustees for the first general plan for the selective admission of freshmen to be adopted by the University. Under this plan, all entering freshmen will be required to furnish scores on specified standardized batteries of tests. Certain of these tests have been shown to correlate well with success in the first semester of college work. Initially an applicant from the lowest quarter of his high school class must, as a condition for admission, pass with a score which indicates that he has at least a 25 per cent chance of being on clear status (i.e., not on probation) at the end of his first semester. The requirements for admission were thus set very low initially but can be adjusted upward as circumstances require or permit.

At the same time a progressive admissions plan was adopted for freshmen and transfer students and first applied in 1961. Under this plan, applicants are considered successively by groups, separated in time of consideration according to previous academic records. Admission in any area of the University can be continued until available facilities are exhausted. The plan assures that available places first will be assigned to the more promising applicants.

In addition to the selective and progressive admission plan, a number of colleges of the University have in recent years increased the entrance requirements in academic subjects for freshmen. At least three years of

English and two years or more in mathematics, two years each of science, a foreign language, and history or social studies will be required for entrance into the four colleges enrolling the largest number of freshmen: Liberal Arts and Sciences, Engineering, Fine Arts and Architecture, Commerce and Business Administration.

Approval was also given (in 1958) by the Senate and Trustees to two means by which gifted and well-prepared students can gain time in moving on to advanced work in their chosen fields:

1. Recognition of Advanced Placement Tests, through which University credit is allowed for demonstrated understanding of a subject equivalent to that attained in a first University course.

2. Early admission of outstanding students to University courses for credit before their graduation from high school.

These steps and other factors have led to an increase in the quality of the freshman class in recent years. The distribution by rank in high school class of freshmen coming directly from high school in 1959, 1961, and 1962 was approximately as follows:

<i>Year</i>	<i>Quartile rank in class</i>	<i>Top</i>	<i>2</i>	<i>3</i>	<i>4</i>
1959	Per cent in group	51	29	15	5
1961	Per cent in group	55	30	13	2
1962	Per cent in group	56	29	12	3

ENROLLMENTS AT URBANA-CHAMPAIGN SINCE 1957

The committee proposed in its *First Report* that the University should plan to accommodate approximately 28,000 students in 1970, distributed between underclassmen and more advanced students in the ratio of 2:5. In 1957-58 the ratio was 2:3. At that time a further subdivision showed the ratios among freshmen-sophomores, juniors-seniors, and professional and graduate students to be very nearly 2:2:1. The proposed goal for 1970 might be 2:3:2, although the reasons for enrolling a higher proportion of advanced students do not differentiate strongly between advanced undergraduate and graduate students. The reasons advanced for the proposed distribution were that the University, because of its many highly developed advanced programs, has a special responsibility to accept all well-qualified advanced students that it can accommodate, and that it should limit the enrollment of underclassmen to maintain a proper balance between freshman-sophomore and more advanced teaching in the large departments which have a wide range of responsibilities for teaching and research in the fundamental fields.

The actual enrollments in the first semester of 1957-58 and the following five years are given in Table 2 and the ratios among levels of instruction, in Table 3. The most striking features are the increases in freshman enrollment by half from 1957 to 1960 and in graduate enrollment by 50

TABLE 2. STUDENT ENROLLMENT AT URBANA-CHAMPAIGN*

Fall Semester	Freshman	Sophomore	Junior	Senior	Uncl. Irreg.	Total Undergrads.	Law and Vet. Med.	Graduate	Total
1957-58	4321	3134	3525	3654	247	(14,881)	439	3493	18,813
1958-59	4724	2940	3679	3535	216	(15,094)	437	3945	19,476
1959-60	5314	3003	3401	3625	218	(15,561)	417	4241	20,219
1960-61	6383	3366	3519	3479	256	(17,003)	428	4524	21,955
1961-62	6347	4044	3754	3516	168	(17,829)	441	4789	23,059
1962-63	5800	4080	4186	4213	272	(18,551)	484	5134	24,169

* Source of Data: Official count as issued by the Office of Admissions.

TABLE 3. ENROLLMENT BY GROUPS AND RATIOS AMONG GROUPS

Fall Semester	Freshman Sophomore	Junior Senior Uncl.	Grad. Law Vet. Med.
1957-58	7455	7426	3932
	2.00 :	2.00 :	1.06
1958-59	7644	7430	4382
	2.00 :	1.94 :	1.14
1959-60	8317	7244	4658
	2.00 :	1.74 :	1.12
1960-61	9749	7254	4952
	2.00 :	1.49 :	1.02
1961-62	10391	7438	5230
	2.00 :	1.43 :	1.01
1962-63	9880	8671	5618
	2.00 :	1.75 :	1.14

per cent in five years. From 1957 to 1961 the numbers of juniors and seniors remained about constant, but they have increased substantially in 1962-63.

The surge of entering freshmen has thus caused the ratio of underclassmen to more advanced students to move up instead of down. The freshman class in 1962, however, is somewhat smaller than in 1960, due in part to the new admissions requirements. If admission at Urbana becomes gradually more selective and retention of students consequently better, if the University of Illinois at Chicago can expand at approximately the proposed rate, if the junior colleges can expand in number and capacity and can improve the preparation of underclassmen for advanced study—then the distribution of students among levels of instruction at Urbana should shift markedly in the desired direction in the next few years. The means for accomplishing the first two of these conditions have been established. The need for expansion of the junior colleges has been clearly and repeatedly recognized and strongly endorsed by the University—and a few new junior colleges have been established—but it is not yet clear that the means for expansion will be adequately provided.

THE PRESIDENT'S FACULTY CONFERENCES AND UNIVERSITY PROGRAMS

The president's faculty conferences have become in recent years an important factor in the processes of self-evaluation and planning in the University. The numerous references in this report to the discussions and conclusions of the conferences attest to their influence. In this section the nature and scope of the conferences will be described. In addition there will be given three statements of position or action by the University which depended rather directly on the conclusions reached at faculty conferences. They deal with three matters of importance to University programs, particularly with the role of the University in educational, social, and economic developments in the state and nation:

The University and the Junior Colleges

The University and International Affairs

The University and the Welfare of the State

Nature of the Faculty Conferences

The typical annual conference is a two-day meeting at Robert Allerton Park to which a representative group of approximately 100 faculty members is invited, from all branches and divisions of the University. A steering committee determines the subjects of discussion, plans the conference, and asks study committees to prepare papers and other material. These are distributed to participants in advance of the meeting, which can then be devoted largely to discussion. The president is the chairman of the meetings. In addition to chairing the sessions on announced topics he has one free-for-all session in which he discusses questions on any subject which the participants wish to raise. At the final meeting, the group attempts to reach consensus on a set of conclusions, guided by a resolutions committee which presents in capsule form its impressions of the sense of the meeting. At a later date the president calls a meeting on the campus to which any member of the faculty may come to hear reports of the conference and to express his views on the subjects discussed.

The conferences are in fact University-wide faculty meetings at which basic issues and problems are discussed to an extent and depth that rarely seems to develop in regular college or University faculty meetings. The latter are largely concerned, as they must be, with the immediate and specific business of the University. It is unfortunate that a manageable conference can accommodate only a small fraction of the faculty. The roster of faculty participants, however, is almost entirely new for each successive conference so that in time a large number of the faculty can participate in one of them. Moreover, the sample which does participate in any meeting is so widely drawn that a conclusion on which the majority strongly agrees is very likely to represent general faculty opinion.

Discussion at the conferences is free, vigorous, and even contentious at times but a reasonable degree of consensus is usually reached. Although a conference has no authority whatever to establish a program or course of action, a number of specific actions in the University can be traced to their introduction or support in the conferences. More important, a background of agreed principles is laid down against which divisions and offices of the University can judge their present programs and future plans.

The nature of the conference discussions can be glimpsed from a list of principal papers or subjects of discussion:

- June, 1958 FIRST REPORT OF THE UNIVERSITY STUDY COMMITTEE
ON FUTURE PROGRAMS
- March, 1959 THE INTELLECTUAL CLIMATE OF THE UNIVERSITY
The Quality of the Faculty
Faculty Participation in Policy Formulation
Interchange Between Disciplines
- March, 1960 THE UNDERGRADUATE IN THE UNIVERSITY
The Classroom Climate
The Non-Classroom Climate
The Entering Undergraduate Student
- March, 1961 ACCOMPLISHING OUR EDUCATIONAL AIMS IN THE
SIXTIES
Aims of Education
The Teacher and the Teaching Function
The State System of Higher Education
A New Look at the First Report of the Future
Programs Committee
- March, 1962 IMPLEMENTATION OF THE IDEALS OF THE LAND-GRANT
UNIVERSITY IN THE NEXT DECADE
The University and Its Relationship to Some of the
Social and Political Problems of the State
Mobilizing the University's Resources for Economic and
Technical Leadership in the State and Nation

The University and the Junior Colleges

In addition to the annual conferences organized as described above, the president has used the same procedure in a more limited way to bring faculty opinion and advice to bear on specific areas of University educational policy and program. An example was a two-hour conference on October 11, 1961, in the president's office attended by 28 members of the faculty, to advise the president on the status of junior college development in the state. On October 16, 1961, the president issued the following statement:

THE UNIVERSITY OF ILLINOIS AND THE JUNIOR COLLEGES

The rationale for an expanding junior college system, nationally and in Illinois, has developed consistently over many years. More recently the movement has accelerated under urgent population and technological pressures. In summary, the argument holds that the local or community junior college, if adequately staffed and financed, can be of material aid in directing youth to the level of training which suits its ability and interest. Enrollment pressures upon four-year colleges may be partially relieved; terminal programs leading to immediate employment may be provided—in new, highly skilled fields in particular. Adult and evening courses are seen as a desirable form of community extension work. Finally, the mere accessibility of college training near home may challenge more able students to seek a four-year college education.

At present there are 26 junior colleges in Illinois recognized by the Office of the Superintendent of Public Instruction. They enroll 42,871 students or 20 per cent of the total college population in Illinois. Sixty per cent of the junior college enrollment is in the eight units of the Chicago Junior College.

The University of Illinois long has been on record in support of junior colleges, by administrative and faculty action and by a variety of professional services, involving field studies, analysis, research, and recommendations. In the postwar period, as early as 1945, Coleman R. Griffith, former provost, prepared a study which encouraged the junior college movement and advocated aggressive action in Illinois.⁶ In its long-range projections, the University's Study Committee on Future Programs has looked with favor upon the development of junior colleges.

More recently other state agencies, in particular the commissions on higher education, have prepared extensive studies and issued strong statements in support of expanding the junior college system. Last year a complementary development, vocational-technical education, was analyzed for the State Superintendent of Public Instruction by University specialists from the College of Education.⁷ A continuing committee in the College of Engineering provides leadership in the special problems of preparing skilled technicians and has proposed the establishment of a Master of Science degree in the Teaching of Engineering Technology. Currently our staff members serve on the Inter-University Survey Bureau, sponsored by the state superintendent and created to make professional surveys of the resources of areas wishing to establish junior colleges. Finally, the new Board of Higher Education in Illinois is directed by its organic act to "give consideration to the problems and attitudes of junior colleges . . . as they relate to the over-all policies and problems of higher education."

Plainly, the University, by its own efforts and through its intermingled relationships with all educational activities in Illinois, has both a neighborly interest and a stake in the junior colleges.

At present a local area may move toward establishing a junior college:

⁶ C. R. Griffith and H. Blackstone, *The Junior College in Illinois* (Urbana: University of Illinois Press, 1945).

⁷ The study described a plan for establishing ten state districts in which vocational-technical education would be associated with community colleges. Capital costs were estimated at \$172 million over a ten-year period. W. P. McClure *et al.*, *Vocational and Technical Education in Illinois: Tomorrow's Challenge* (Bureau of Educational Research, College of Education, University of Illinois—for Office of Superintendent of Public Instruction, 1960).

(a) Through local initiative and promotion, making use perhaps of surveys by the Inter-University Survey Bureau. Obviously, by definition such surveys are professional evaluations, not promotional efforts, and are designed simply to enlighten local leaders about local resources.

(b) By securing the expansion of an existing junior college district to include areas desirous of junior college services. Such expansion may take place by the annexation of a larger area or by the reorganization of the district. In each case the issue must be decided by referendum.

(c) Perhaps by cooperating with the Office of the State Superintendent in its plans for a state-wide system of junior colleges. That office is committed to the "comprehensive" junior college; to "an element of local control in admissions, supervision and support"; and to the establishment of standards at the state level. An organizational plan for such a system has yet to be developed.

Whatever the pattern followed, controversial issues may be foreseen:

1. What kind of institution will be established? A comprehensive junior college offering parallel transfer work, vocational-technical programs and adult evening courses? Separate technical institutes? Some other combination? Specialists seem to favor, some with vigor, the comprehensive idea, likening it to a microcosm of the comprehensive university with arts and sciences at the core and subprofessional work at the rim.

2. Shall control be local or at the state level? How may regional conflicts be resolved? Positions vary as to the intrinsic strength that lies in local control—especially with regard to securing needed state support. The question is raised as to whether standards can be maintained without the over-all influence of a central state agency.

The matter of standards is of particular interest to the University. Our faculty is properly concerned that the junior college curriculum (wherein it seeks to equip students to transfer to the University) should not anticipate professional training by an excess number of introductory professional courses in, for example, agriculture, education, or engineering. Here lies a problem in communications and consultation which we are prepared to help solve.

3. The capital needs for junior colleges, however established, are yet to be supplied. A bill which would have provided \$10 million in matching funds was passed by the last legislature but vetoed by the governor for technical reasons. In this area as in the total junior college movement, Illinois is already late and moving too slowly. There are other financial issues, involving the payment or nonpayment of tuition by home districts for students who attend junior colleges in outside districts. There is in fact the unresolved issue of whether any tuition should be charged.

In these matters, aside from our abiding concern about the acceptability of transfer work and the extension of educational opportunity, the University of Illinois does not take a position of advocacy. We do not endorse or resist local vs. state control. We do not support or reject a particular organizational structure. We have no formula for the problem of financing. Our professional experts are free, of course, to express their professional opinions, and we are glad to make them available to those who seek their aid. When they speak to the issues cited they speak as individuals and do not express official University policy.

However, we are deeply involved in the junior college movement. We are materially interested in the question of training the teachers who will staff the junior colleges. Increasingly our scientists will be concerned about the need for

technicians and for training their teachers. Our faculty is helpfully interested and available in the design of curricula which are best calculated to help students transfer successfully to the University. Already at the local level we have tried to move out of the way of the junior college in our extension programs; we are withdrawing much of our work at the freshman-sophomore level and are concentrating upon programs for juniors and seniors.

In summary, the University of Illinois takes a position of positive encouragement of strong junior colleges and deplores inaction or delay in their establishment. We do not wish to administer such a system nor do we advocate specific solutions to the questions of control, expansion, or finance. We offer our services to those who wish them—through field activity, liaison, consultation, and analysis. Our specialists will continue to conduct research investigations in this subject as in other basic educational problems of professional interest. We pledge continued efforts toward the preparation of junior college teachers.

“At the University of Illinois we are assuming that the expansion of the junior college movement in Illinois will be one of the significant developments in this state during the next two decades. The University expects to apply, in the fullest extent possible, its teaching, service, and research resources in encouraging that development.”⁸

The University and International Affairs

Another noteworthy example of the president's conferences was the special Faculty Conference on the Role of the University of Illinois in International Affairs, an all-day meeting on December 2, 1961. The attendance was approximately 100 and the participants came from 15 colleges or divisions of the Urbana-Champaign campus and from both Chicago campuses.

The conference moved through four areas of discussion, based on materials which had been distributed in advance of the meeting:

Area Study Programs

Non-Western Subject Matter in the Undergraduate Curriculum

Overseas Programs

Training for Overseas Service

The purpose of the discussions was to assess the University's present activities and resources in these fields and to discuss possible lines of future development. The context of the discussion was the relationship of the University to the nation's growing participation in international affairs and the activities of other universities in support of this participation.

Among its recommendations, the conference concluded that University activities related to international affairs should be greatly expanded to include: instruction in non-Western languages, area studies in addition to those of the present centers for Russian and Latin American studies, comparative and interdisciplinary international studies concerned with

⁸ David D. Henry, “The Junior Colleges in Illinois,” address, Centralia, Illinois, May 28, 1960.

problems of global significance, introduction of non-Western subject matter through a revision of present relevant courses or the addition of new ones.

As noted in the report of the conference in the *Faculty Letter*, No. 25, December 12, 1961, the recommendations as stated "can convey neither the feeling of need and urgency nor the sense of opportunity and challenge revealed in the discussion. A persistent undercurrent of feeling voiced at the conference was that such recommendations are not peripheral to the life of the University but rather, represent a shift in the center of gravity of the total intellectual perspective."

Following the conference, a new general course for undergraduates was announced, to be given in the second semester of 1961-62, under the title, "Modern Asia: Contemporary and Future Problems." Faculty from a number of departments participated in the instruction.

The Board of Trustees on May 24, 1962, approved a central administrative assignment to coordinate the present diverse international programs in the University and to provide direction to future developments. Dean Royden Dangerfield was named Director of International Programs. The major types of responsibilities which the director will assume were listed as follows:

1. The collection and dissemination of information to faculty members and administrative officers concerning international educational programs. Included will be information concerning federal legislation and the international programs of the various federal agencies; the resources and interests of the private philanthropic foundations; the activities of other universities in this field, especially the universities participating in the Committee on Institutional Cooperation. Information concerning the University's own activities and plans will be recorded and reported at regular intervals.

2. General administrative supervision of overseas programs conducted under contracts with federal agencies, such as the Agency for International Development and the Peace Corps. The director will also be concerned with foundation grants providing for the support of overseas programs and for campus programs related to overseas projects.

3. Coordination and encouragement of the University's relations with government agencies, foundations, national and international organizations, and other universities concerning international programs.

4. The encouragement of instruction and research in international affairs, including interdisciplinary studies and the planning of inter-college programs such as centers for foreign-area studies.

5. Coordination among the various University offices concerned with services to foreign students, including the Office of the Director of Foreign Students, the Office of Admissions and Records, the Program of

English for Foreign Students, and the Housing Division. The Office of International Programs will also take the initiative in the search for outside financial support for foreign students.

6. Provide leadership in the search for outside financial support of programs for the exchange of students and faculty members with foreign countries.

7. Analysis and evaluation, on a continuing basis, of the University's involvement in international programs, including studies of the utilization of funds, space, and staff.

The University and the Welfare of the State

As noted above, the annual conference in March, 1962, had as its general theme, "Implementation of the Ideals of the Land-Grant University in the Next Decade." The subjects discussed and the relationship of the conferences to the development of University policy is well brought out in an address given by Provost Lanier to the University Citizens Committee at Urbana on May 23, 1962. The talk was published in the *Faculty Letter*, No. 37, June 5, 1962, and will be given in full here.

NEW APPROACHES TO COOPERATIVE RELATIONS WITH THE STATE GOVERNMENT AND WITH INDUSTRY

This centennial anniversary of the Morrill Act is a year of national appraisal of the impact on higher education—and indeed on American life generally—of the land-grant colleges and universities. It is a time also to look ahead, to ask whether these institutions are likely to continue their educational revolution into a second century; and if so, what directions it might take.

The general educational significance of the land-grant movement has been admirably summarized by Allan Nevins in the following words from an address delivered at the centennial convocation of the American Association of Land-Grant Colleges and Universities last November:

"One hundred years after the Morrill Act which founded them, the land-grant colleges and universities face the same central problem as at the outset: How can they best be of service to democracy? They have decisively won some of the battles which such fathers as Ezra Cornell, Jonathan B. Turner, and Justin S. Morrill expected them to fight. Long since, they helped deliver a death blow to the narrower program of classical studies which bestrode higher education in 1860. Long since, too, they lifted agriculture from the status of a trade to that of a profession; raised the 'mechanic arts' from humble position to the dignity of an elaborate series of professional callings; and both in academic training and research gave agriculture and engineering a scientific character in the highest standing. Meanwhile, they did much to make coeducation a basic feature of American academic life and to divorce university life from dogmatic religion. And by severe struggles, often in hostile environments, the greatest land-grant institutions preserved and broadened that instruction in pure science and the humanities which is essential to our national character and culture."

Thus the land-grant institutions that have become comprehensive state universities can begin the second century of the land-grant movement with the satisfaction of having carried an educational revolution far beyond its original purpose—which was mainly to "democratize" higher education, in terms both

of diversity of students and of subject matter. These institutions have also become centers of advanced study and research that compare favorably with the best universities of the world. Furthermore, they have extended their services beyond the bounds of their campuses to a constituency that includes both individual citizens and a wide range of community, state, national, and international interests.

My topic falls into this third category of major functions of a comprehensive state university. More specifically, I should like to discuss the problem of cooperative relations between the University of Illinois, agencies of the state government, and industry—with special reference to the steps that might be taken to improve the economic and social welfare of the state as a whole.

CURRENT RELATIONSHIPS WITH STATE AGENCIES

It will be of some interest first to review briefly the nature and extent of the assistance now given to state agencies by the University. For example, almost one hundred faculty members served on committees, panels, and boards of state departments or offices during the calendar year 1961. Although this service was sometimes not extensive, for many individuals it represented a substantial contribution of time and technical assistance.

Contracts for research and other services are a second type of cooperative activity. During 1960–61, the University of Illinois had contracts with state agencies that amounted to slightly more than \$800,000. Some thirty University departments were involved and twelve state agencies. The Division of Highways was the largest contractor, most of its projects being conducted by the Department of Civil Engineering. Next in order was the Department of Public Welfare, which supported a substantial program of research in the Department of Psychiatry of the College of Medicine. Other state agencies included the Departments of Agriculture, Conservation, Public Safety, Registration, and Education—together with the Office of the Superintendent of Public Instruction, the Housing Board, the Public Aid Commission, the State Library, and the Cities and Villages Municipal Problems Commission.

Another joint State–University project that has been initiated during the present year should have far-reaching consequences for one of the state's heaviest responsibilities. I refer to the new mental health facility to be constructed by the State Department of Mental Health on land provided by the University. It will be operated jointly as a research and training center. With additional support expected from the federal government, it is hoped that the research conducted here on the causes of psychological disorders in children, and on methods of treatment, will contribute substantially towards lessening the staggering burden of mental illness on the people of the state.

Closer to my main topic is the assistance being provided by the University of Illinois to the Illinois Commission on Revenue for its study of economic resources, in relation to ten-year projections of expenditures and revenues of state and local governments. Professor H. K. Allen of the Department of Economics is the research director for the commission, and several University agencies and individual faculty members are assisting him in special studies.

Among the participants in this work is the Institute of Government and Public Affairs, which was established by the Board of Trustees pursuant to a resolution adopted by the 1947 General Assembly. The institute has the general mandate to “investigate specific practical problems that arise at all levels of government,” and over the years it has conducted research for many state and local agencies of government on a wide range of problems.

The foregoing list of cooperative relations with state agencies is a substantial one, and most of these activities are highly important. But except for the work of Professor Allen and his associates, there is presently a dearth of joint State-University activity concerned with the economic, governmental, and social problems arising from increasing population, migration, urbanization, and chronic unemployment.

During the past year, however, several developments have occurred at the University that should lead to improvement in this picture. They reflect growing concern with the need to improve the state's utilization of its natural and human resources; and they represent also the conviction that the University of Illinois has a special obligation to lend technical assistance to the efforts of government agencies, industry, and education as they seek to achieve this objective.

Office of Community Development. Among these new University activities is the program being conducted by the Office of Community Development, which was established last year under a three-year grant from the Ford Foundation. The program has three purposes: (1) to examine new ways in which the University might most effectively serve the state's urban areas; (2) to experiment in the training and use of urban generalists—people who are competent in a variety of fields that touch on urban life, but who are not narrow specialists in a single discipline; (3) to give several Illinois communities direct access to the University's expertise in urban affairs, by assigning a staff member to study the problems of each area. (The communities selected are Peoria, Rockford, and Springfield.) The experience gained from these studies should lead to an improved training of graduate students, to a re-definition of "urban problems" for research purposes, and to a new approach to the kind of extension services the University might provide to urban centers.

President's Faculty Conference. Further evidence of the University's concern with these problems was provided by the President's Faculty Conference, held at Allerton House in March, 1962. The general subject this year was "Implementation of the Ideals of the Land-Grant University in the Next Decade" and the discussions were focused mainly upon two study papers prepared by special faculty committees.

The first paper considered the problems of the metropolitan region and the following statement summarized the consensus reached:

"Urbanization as one of our major problems has produced questions of major significance which are worthy of serious and continuing research by the appropriate disciplines at the University. Because many of these questions are beyond the scope of individual disciplines, there is needed a coordinating agency of some permanence with a limited staff to encourage, arrange, and finance task forces, drawn from various disciplines, in studying these major questions. Existing resources, such as the Council on Community Development and the Office of Community Development, should be utilized to institute the measures required to encourage and support departmental research and task force activity and to devise desirable next steps in achieving an all-University program.

"The development of the new campus at Chicago will also test the University's ability to respond to old and new needs in a new setting. Congress Circle will offer unique opportunities for study which will enhance the University's capabilities for research on major problems of society."

The second conference paper discussed possibilities for mobilizing the University's resources for stimulating economic and technological growth in the state. The importance of research in the social sciences was stressed and greater emphasis on these fields in the University was recommended. It was suggested further that, where mutually beneficial, the University should devise appropriate means for cooperating with industry in research and development. To this end, it was recommended that the University assess the value and feasibility of encouraging industry to locate basic research facilities near the University's campuses. It seemed likely, for example, that cooperative relations between the University and industries engaged in a substantial amount of research would be mutually beneficial, although it was emphasized that the University should not expend its staff and resources on routine "services" such as developmental research and operational testing.

Committee on the Role of Universities in Regional Economic Growth. Another development this year is closely related to these recommendations of the faculty conference. It was initiated by a request from the Governor's Committee on Unemployment for a study of the relationship of the scientific resources of universities to industrial development within a region. The committee expressed particular interest in the factors influencing the location of industries that are heavily dependent on research and development. A University committee to study this problem—and more generally the role of universities in regional economic growth—was appointed last fall, under the chairmanship of Professor J. F. Bell of the Department of Economics. An initial study of this problem will probably be completed by September, 1962. In addition to providing information and recommendations to the Committee on Unemployment, the results of this study will be useful to the University in the planning of its future cooperative relations with industry.

In this connection, it should be re-emphasized that direct University-industry cooperation can be most productively cultivated where the industrial enterprise involves a significant component of research and development. It is such industry, however, that has been relatively scarce in Illinois and other Midwestern states—as compared with the East, the Southwest, and the West Coast. This deficiency has been particularly marked in the field of electronics, and Illinois will not be able to claim its share of the so-called "growth industries" unless it can build up the research potential required for advanced electronics technology.

The University of Illinois is prepared to cooperate with the electronics industry of the state in developing a program to meet this need. The College of Engineering has a distinguished research faculty in electronics and in solid-state physics. Furthermore, its capabilities in these fields will soon be greatly augmented by the construction of a new Materials Research Laboratory—for which the Atomic Energy Commission and the Department of Defense will provide funds totaling \$5,000,000. With such resources available, it would be relatively easy to devise cooperative arrangements whereby professional and technical personnel in the electronics industry could be kept up to date in the rapidly changing technology of this field. The College of Engineering would be glad to participate in such a program, which could prove to be highly beneficial to the University and to the economy of the state.

In conclusion, I should like to mention a relatively new state agency which should facilitate the University's efforts to encourage economic growth through cooperation with state government and with industry. I refer to the Board of

Economic Development, whose chairman is the governor and whose members are the heads of the departments concerned with economic affairs. In recent conferences between staff members of the board and various University officers, arrangements have been discussed whereby the University would provide technical assistance to the Board in proposed studies of the state's resources.

In these and other ways, we are prepared to bring the University's resources for advanced study and research increasingly to bear upon the complex economic and social problems of the state. We believe that the necessary support for such cooperative efforts will be forthcoming, including funds to meet the extra costs of special research projects that would have to be financed outside the University's regular budget. We believe also that in this direction will lie one of the major contributions of the University of Illinois as a land-grant institution in its second century of service to the people of the state.

Appendices

Appendix I. The Entering Undergraduate Student

FOREWORD

This report was prepared by a subcommittee of the University Study Committee on Future Programs in consultation with and with the concurrence of the full committee. The members of the subcommittee were B. J. Diggs, R. M. Price, C. W. Sanford, and L. J. Cronbach (chairman). The report was presented at the President's Faculty Conference in March, 1960. It was based on a series of studies of student characteristics, some by the Student Counseling Service, the Office of Admissions and Records, and other University agencies, and some by the subcommittee especially for this report. The latter were planned and executed hastily to meet conference deadlines. Samples of data were used rather than complete student populations but there is reason to believe that the general findings are dependable.

The individual studies, eleven in number, were collected under the title, "The Illinois Undergraduate Student," and distributed to the conference participants. They will not be reproduced here, although reference to them is made in this report. They dealt with the following subjects:

1. After high school, what?
2. College choices of state scholarship winners.

3. Scholarship opportunities.
4. Admission requirements and admissions experience.
5. Quality of the freshman class as a whole.
6. Characteristics of entering freshmen by colleges.
7. Educational history of freshman entrants.
8. Factors associated with achievements of able students.
9. Characteristics and educational history of transfers.
10. How superior students view their University.
11. How the faculty views the Illinois student.

The purpose of the report is to analyze the academic ability and other characteristics of the student body, to identify current or impending problems and to recommend courses of action for the consideration of the faculty and administration of the University.

A SOUND STATE EDUCATIONAL POLICY

University policy on student recruitment, selection, and retention must depend directly upon the educational policies and programs of the state. As President Henry pointed out in his remarks on "The State of the University" in December, 1959:

Illinois is economically able to continue to maintain a first-rate system of higher education and to meet the future requirements created by the increase in population and other social factors. While Illinois as a state ranks among the highest in per capita income, it ranks among the lowest in per capita expenditure for higher education. . . . Chicago (is) one of the few large cities of the nation without a comprehensive program of state-supported collegiate education. . . . The development of a statewide junior college service has been slower than in certain other states. . . .

As the demands for junior college and four-year collegiate education have backed up, so have the needs for noncollegiate post-high school education. With its diversified economy, cultural pluralism, and complex increasing population, Illinois needs a well-planned and comprehensive program for education beyond the high school, encompassing more than junior colleges and expansion of state universities. . . .

In view of the accumulated pressures for expansion and the anticipated needs, Illinois is tardy in arriving at a decision on a state plan.

Such a plan is surely forthcoming, as a fruit of the efforts of the State Commission on Higher Education, the General Assembly, and the institutions of higher education themselves. The University should exercise strong leadership, in every practicable way, to make the plan sound. This leadership may take many forms: fact gathering and fact interpretation to which faculty members can bring special competence, inventive proposals for institutional arrangements and teaching approaches which can meet the heavy demands ahead, education of the public with regard to the needs of the state educational system, and—by no means

least—presentation of a clear image of the role the state University should play in order to be of greatest benefit to its constituents.

The educational program of the state of Illinois should provide for the maximum development of each young person, in order to qualify persons for responsible jobs and to provide a well-educated citizenry appreciative both of cultural values and of our scientific age. This calls for the development of publicly supported higher education of every type required by the economy, the scientific development, and the civic and cultural life of the state. Private institutions can serve very well the students they enroll but the high school graduate and his parents commonly look to the state to provide an opportunity suitable to his means, interests, and talents. Providing that opportunity will develop invaluable human resources.

The college-age population of Illinois, 486,000 in 1959, is expected to rise to 750,000 in 1970. Further pressure arises from the increasing proportion of high school graduates who seek advanced training. As the ability range of students seeking higher education broadens, it becomes clearer than ever that no one type of institution and no one instructional program can serve all students equally well. Moreover, each institution must limit the size of its student body in some way and at some appropriate point if it is to maintain the quality of its program.

These problems make it imperative that institutions find their particular individual roles. The total system will serve its purpose better if each college and university concentrates on certain objectives and builds a staff, student body, and facilities appropriate to those objectives, instead of trying to be all things to all students. The college which serves a local public must deal with a more random cross section of talents and interests than a university serving the whole state. The University must have as its first concern the especially promising young people who will give intellectual leadership to the state and nation, who require a kind of educational program that can be established at only a very few places in the state.

The impediments to comprehensive planning and differentiation of institutional functions are not unique to Illinois. A report prepared by officials of several western states⁹ expresses clearly the nature of the problem:

Our American tradition of relatively independent growth for colleges and universities has been translated into an almost haphazard growth of our public colleges—*independent of each other* if not of their controlling legislative bodies. We have failed to see the advantages of specialized functions for each institution and have not moved imaginatively to adapt these functions to the total,

⁹ *Selecting Students for Western Colleges and Universities*, Western Interstate Commission for Higher Education, 1959; pages 2-3.

long-range needs of our states. Local community pressures are very real and powerful and immensely hard to resist. On the other hand, there are few spokesmen who raise their voices for the broad public interest in balanced growth for the state as a whole.

Because of the difficulties of defining precisely the different functions of our public colleges—and the consequent impossibility of demonstrating conclusively that any particular college is doing a high-quality job of performing its function—the main basis for determining the financial support deserved by a state university or college has been the size of its enrollment. The “numbers” theory has been so dominant so long as to be tacitly accepted by many educators and legislators and has led to a competition for students, often unmentioned and unwilling, among existing state colleges and universities.

This pressure for numbers has induced, too often, a surrender to local, immediate pressures on colleges to be everything to everyone. Residents close to a public college’s campus naturally want their children to attend college near home, for reasons of convenience and economy which may be very significant in the West because of its great distances. . . . Needs of . . . “consumers” of public higher education have tended also to direct the growth in state university programs, so that a great “cafeteria” assortment of courses and degrees is the rule at most of our institutions.

This has not in most cases been the result of a conscious, over-all plan to meet the needs for higher education of the whole people of the state or of the region. Rather, existing institutions have been asked to provide whatever instruction was desired by any group which could articulate those desires. While this was natural enough in a broadly democratic, publicly sponsored educational system, it has not led to the most efficient and effective use of our educational resources. . . .

All these things have contributed to the lack of coordination among the parts of our state systems of higher education. There is no dodging the difficulties inherent in problems of defining educational functions. But if our states are to have quality educational programs for the students of the 1960’s, we must not only increase our educational expenditures but must define the distinctive role of each institution and adapt our colleges’ admission and retention policies accordingly. . . .”

What is meant when we say that every student who can profit from post-high school education should have the opportunity? For simplicity our position can be stated in terms of the student’s rank in his high school class, although this by itself is an inadequate index of the promise of any individual graduate.

1. Most top-quarter graduates should go to a college with the aim of completing at least a four-year course.

2. Most second-quarter graduates can complete a full college course successfully, though in general they will find it harder.¹⁰ Important positions in many fields must be filled from this group, simply because the number of college graduates from the top-quarter is insufficient to meet

¹⁰ This and other statements concerning expectancy of success in college are based on Study 7, “The Illinois Undergraduate Student.”

the increasingly numerous demands. Hence the second-quarter graduate should be encouraged to go to college. For some a non-degree technical course is a desirable alternative.

3. A large number of third-quarter graduates have the ability to finish college, although their relatively poor high school records frequently imply lack of ability or of academic interests. Those who wish to try a college course should have the opportunity, under conditions which favor success. The junior college provides an appropriate means for testing the ability and determination of such students and at the same time provides useful education for the high school graduates who do not merit four years of state-supported education.

4. The fourth-quarter graduate is generally a poor college prospect and will usually be wiser to enter a job or training program where he is likely to succeed. Post-high school training in a terminal vocational curriculum in a junior college or technical institute can equip many of these graduates for greater productivity and value to the community.

Matching of plans to ability calls for increasingly effective guidance in the high school. Although a reasonable proportion of able boys go to college, this varies considerably with the high school; moreover, in some schools the ability of pupils bears little relation to college attendance.¹¹ In one Illinois school, 96 per cent of top-quarter boys and 42 per cent from the second and third quarters go to college. In another school from a less prosperous community, 63 per cent of top-quarter boys and 69 per cent from the next two quarters are in college.

Guidance in Illinois high schools has lagged far behind needs. Fortunately, the impetus of the National Defense Education Act is now strengthening high school efforts to develop an intelligent educational plan for each pupil. The conferences on school-University articulation which have been held on the Chicago and Urbana campuses during the past three years have also accelerated improvements of guidance programs and the coordination of guidance, counseling, and testing programs in the high schools and the University.

A particularly critical need is to find means of encouraging able women to complete a college education. Women are as capable as men in general intellectual ability, yet we find that only half the girls from the top-quarter of the high school class go to college.¹² When they do, they are more likely than boys to attend a local college; and those who enter the University are likely to leave after two or three years. As one recent discussion¹³ states:

¹¹ Study 1.

¹² Study 1, Study 7.

¹³ *Education of the Academically Talented*. Carnegie Foundation for the Advancement of Teaching, 1959.

The fact that many bright girls do not go on to college is partly due to the values of our society. The family which will make sacrifices to send a son to college is less inclined to do so for a daughter. And many girls believe that a man is not likely to marry above his educational level, so that with each step up the educational ladder they see a reduction in the number of possible mates. Unfortunately, in some circles it is still considered "unfeminine" to be bright or well educated. This is particularly regrettable because an educated mother may be a powerful influence on the attitudes of her children toward intellectual achievement.

Far more women should be attracted to the University and encouraged to complete a degree. Thirty years of the kind of contribution which a well-educated, highly able woman can make to society are undoubtedly more valuable than 45 years of service from an average male high school graduate who attends the University.

Any consideration of the proper role of the University in a state educational system must rest on the assumption that other institutions will be established or expanded which, together with the University, will serve the variety of needs of an increasing number of students and the cultural and economic development of Illinois. The state must push vigorously the development of local institutions suited to the typical college-bound youth and of the major state institutions including the University of Illinois in Chicago. The University can make its greatest contribution to the development of talent only when other public institutions are available for the students who can be educated as well, and in some cases better, outside the University.

CHARACTERISTICS OF THE DESIRABLE UNIVERSITY STUDENT

When a sound state-wide educational program is developed so that the University is free to do its unique job, the University should try to attract a student body consistent with its fundamental aims and responsibilities outlined in the committee's *First Report*. That is, the University should try to attract able and serious students whose interests are in, or are essentially related to, the fundamental branches of learning. The University, with its specialized faculty, is especially well-suited to give upper-division, professional and graduate education to the student who will take a place of high responsibility in industry, research, teaching, or community service.

Since it cannot extend its services to all who may apply in coming years, the University should attract freshmen who will very probably complete a four-year course, and it should be especially concerned to enroll those who are good prospects for postgraduate and professional training. Other institutions, less vast and less departmentalized, can often do as much for the student who wants the general broadening that a one- or two-year college experience provides. The University should never

TABLE 4. SURVIVAL EXPERIENCE OF VARIOUS GROUPS IN RECENT YEARS
BASED ON NINTH-SEMESTER STATUS (PERCENTAGES)

	Degree Completed	In School	Out of School
<i>Freshmen entering at Urbana</i>			
1. Agriculture males	30	13	57
2. Engineering males	20	20	60
3. L.A.S. females	31	3	66
4. Students on probation in second semester	10	6	84
5. Students not on probation semester 2, but on proba- tion semester 3 or 4	22	24	54
<i>Transfers entering at Urbana in fifth semester with grade average 3.5 and above</i>			
6. From UI, Chicago, Engineering males	54	39	8
7. From junior colleges, Engineering males	19	50	31
8. From other colleges, Engineering males	38	39	23
9. Native* Engineering males	77	21	3
10. From UI, Chicago, L.A.S. females	73	6	21
11. From junior colleges, L.A.S. females	40	18	43
12. From other colleges, L.A.S. females	61	14	25
13. Native* L.A.S. females	80	3	17

Note: These are estimates based on samples from intake in one or another recent year. Groups are not fully matched on number of units completed, and groups 6-13 are too small to permit precise comparisons of percentages.

* Originated in UI-Urbana, completed four consecutive semesters, enrolled fifth. Not on probation 5th semester.

turn toward providing two-year "terminal" vocational programs.

The example of the University of California is pertinent, even though its situation is quite different. That university enrolls far more transfers than it does freshmen, restricting its freshman class to approximately the upper eighth of high school graduates. In this way, it makes the most effective use of its especially qualified staff. This policy is possible only because there are many other state institutions with carefully selected staffs and effective instructional programs.

Of the present freshman intake at Illinois, approximately half leave

the University after two years or less, never savoring the advanced instruction which is the University's *raison d'être*. Some 40 per cent of students ultimately complete a degree (see Table 4, based on experience through eight semesters). To be sure, those who leave early gain from their University experience, but we believe that local and regional institutions can provide equally well, at far less cost, for the student whose educational aim is modest or whose aptitude is questionable.

The probability that a student will complete a degree is closely related to his high school record, one study producing these figures: top quarter, 56 per cent; second quarter, 32 per cent; third quarter, 17 per cent; fourth quarter, 8 per cent.¹⁴ The 1959 distribution of entering freshmen at Urbana was as follows: top quarter, 51 per cent; second quarter, 29 per cent; third quarter, 15 per cent; fourth quarter, 5 per cent (see also Table 5). This is consistent with the experience of other Midwestern state universities, as is the drop-out rate of 60 per cent reported above. The only marked exception to the usual pattern is the University of Michigan, which draws half of its freshmen from the top *tenth* of the high school class.

Of particular importance in Table 5 is the finding that there is a marked difference in quality between the freshmen the University attracts from Cook County and those from other parts of the state. This fact appears to account for nearly all the difference between quartile-rank distributions for the Chicago and Urbana freshman classes.

In attempting to specify a target toward which recruitment and admissions policy should be directed, the committee finds itself in difficulty, because the appropriate target will be different at different times in the next ten years as other institutions develop. It is therefore necessary to consider goals by stages.

The immediate goal of the University should be to bring the distribution of ability in the freshman class to approximately this level: top quarter, 60 per cent; second quarter, 25 per cent; other, 15 per cent. This lower group will include students who provide evidence that their promise is greater than is indicated by their high school standing. This standard should be sought on both campuses and in every college on each campus, unless there are clear reasons why a wider distribution of ability is needed to fill demands in a particular field. The standard here described is not a radical step upward; it is presently reached by all women entering at Urbana, and by all non-Cook County freshmen at Urbana. It does imply that considerable improvement should be sought in the academic ability of freshmen from Cook County, who constitute 39 per cent of the Urbana resident freshmen and 96 per cent of the freshmen at Chicago. At Chicago,

¹⁴ Studies 5, 6, 7.

TABLE 5. PERCENTAGE OF CERTAIN GROUPS FROM VARIOUS LEVELS OF THE HIGH SCHOOL CLASS OF 1959 AND OTHER RECENT YEARS (PERCENTAGES)

	From Lower Half	From Highest 25%	From Highest 10%
<i>Entering Freshmen</i>			
URBANA CAMPUS			
1. All residents	20	51	24
2. Nonresidents	2	49	23
3. From Cook County	33	37	16
4. From other Illinois Counties	14	59	30
5. Males	22	48	
6. Females	15	57	
7. College of Engineering	14	60	
8. L.A.S.	14	56	
CHICAGO CAMPUS			
9. All residents	38	31	11
10. From Cook County	38	31	11
11. From other Illinois counties	51	17	9
12. Males	40	28	
13. Females	20	44	
14. Engineering curricula	33	36	
15. L.A.S. curricula	32	37	
<i>Transfers to Urbana as Juniors</i>			
16. From UI, Chicago, Engineering males	13	52	24
17. From junior colleges, Engineering males	49	26	17
18. From other colleges, Engineering males	23	42	17
19. Native Engineering males	7	75	49
20. From UI, Chicago, L.A.S. females	4	73	54
21. From junior colleges, L.A.S. females	14	58	30
22. From other colleges, L.A.S. females	10	58	48
23. Native L.A.S. females	4	84	50
<i>Graduates (first degree)</i>			
24. All graduates—1955	11	62	

Note: These are estimates based on samples from intake in one or another recent year. Groups are not fully matched on number of units completed, and groups 11, 16-23 are too small to permit precise comparisons of percentages.

the quality of freshmen from outside Cook County also should be improved. In the decade ahead, the student body on the Chicago campus of the University should match in quality the student body enrolled at Urbana.

The committee regards this 60-25-15 distribution as only an intermediate target.¹⁵ From 35 to 50 per cent of the students from the second-quarter—at least in Agriculture, Engineering, and Liberal Arts and Sciences—leave school with poor academic records before reaching the upper-division courses where they might profit from the unique characteristics of the University.¹⁶ About half of the remainder leave with satisfactory grade records. The committee believes that a freshman admissions procedure should be devised which will discourage from coming directly to the University any student who has an even probability of going on probation at the end of the first semester. This will eliminate many students near the average of their high school classes and others who have earned relatively high marks through diligence but who lack the genuine intellectual power University work demands.

Not every student who goes on probation is a poor subject for the University's attention; a fairly large number of such students recover, perhaps shifting to a more suitable course, and go on to graduate. The standard proposed above would admit many students who will go on probation. It is suggested, however, that a shakedown period in another institution promises a better start for the student who is as likely to go on probation as not.

The faculty may dream of an elite student body where every student is gifted, but extreme selectivity is not consistent with the University's broad responsibilities. Agriculture, to name only the first college in the alphabetical list, must train as many of the state's farmers as possible in the scientific and economic principles that underlie modern farm management; it should seek to enroll, either as freshmen or as transfers, the largest possible number of those prospective farmers who can master University-level instruction in such subjects. The College of Agriculture has an equally large role in providing four-year courses for persons who will take responsibility in the various agricultural industries. Such positions will not be filled if the University confines its effort to the limited number of distinctively gifted students. The committee sees no prospect that other institutions will develop by 1970 to the point where the University of Illinois should consider policies as restrictive as those now in force at the University of California.

¹⁵ Note added in 1962: The distribution improved from 51-29-20 for all entering freshmen in 1959 to 55-30-15 in 1961 and to 56-29-15 in 1962.

¹⁶ Study 7.

Recruiting and admissions policy regarding transfers will be increasingly important as other institutions expand. Already about half the University's graduates are students who began elsewhere than Urbana; in the next decade, this figure must double or triple, if the University is not to turn away advanced students who have already proved themselves to be of University caliber. A growing fraction of these transfers will enter the University at Chicago when its facilities and four-year curricula are developed.

The fact that transfer students can do well is demonstrated by experience with students shifting to Urbana from Chicago. The University at Chicago, despite its less selected intake, has maintained a program and standards such that its students come to Urbana as juniors with little or no disadvantage compared to those who began at Urbana.¹⁷

A proper policy, then, is that the University should provide in Urbana or in Chicago for every resident applicant who at the end of two college years has demonstrated the ability and motivation to profit from contact with a specialized University faculty. Transfers now coming to the University from other colleges, however, do not adequately meet this criterion. Among men in the College of Engineering as juniors, 75 per cent of those who began at Urbana are from the top quarter of the high school class. But this is true of only 26 per cent of junior college transfers and 42 per cent of transfers from other colleges. These groups are actually less select in terms of high school rank than Urbana freshmen. Survival figures likewise indicate that transfers, particularly those who enter with no better than C averages, are less likely to complete degrees than those who begin at Urbana.

The present caliber of "native" juniors and transfers from the Chicago campus provides a yardstick against which other transfers should be measured. The native juniors have a very high probability of completing their undergraduate programs; even among those with mere C averages, 80 per cent have degrees or are still in school at the end of nine semesters.

Recruiting, admissions, and placement policies for transfers should be developed which will provide an incoming group whose ability distribution matches that of the "native" students in the same class. Nothing less than this is fair to the students who have been discouraged from remaining in the University.

To summarize the above discussions, this committee makes the following recommendations with respect to admissions procedures:

1. When resources of facilities and faculty limit enrollment, the available places should be given to students who appear most likely to have

¹⁷ Study 9.

the ability to complete a four-year program, as indicated by previous academic achievement and other criteria which have demonstrable reliability.

2. In terms of rank in high school class the immediate goal should be to bring the distribution of ability in the freshman class to 60 per cent from the top quarter, 25 per cent from the second quarter, 15 per cent from the lower half, or better, in all branches and departments of the University.

3. In determining freshman admissions, rank in class should be combined with one or more other predictors of success which present and continued studies show to be significant,¹⁸ such as high school grade average, aptitude and achievement tests, and recommendations of high school principals and teachers.

4. Since studies of the performance of Illinois students show that students who go on probation in their first semester are very unlikely to graduate, entrance tests which correlate well with performance in the first semester should be given substantial weight in determining admission.¹⁹ The recommended standard is that students who have a 50 per cent or greater probability of going on probation in the first semester should be denied admission.

5. Continued consideration should be given to subject matter requirements for admission of freshmen. This committee endorses the proposed lifting of the University requirements for all students of 9 high school units in certain specified academic subject areas to 12 units. It also endorses the requirement of specific subjects for curricula in which they will be needed. In this connection the committee notes the wide-spread observation of the faculty that many students are seriously handicapped by lack of ability to write in English.²⁰

6. Admission of transfer students at any level should be governed by the principle that such students should fall within the same range of ability, preparation, and promise of successfully proceeding to graduation as those students admitted as freshmen at Urbana or Chicago who are at the same level and are allowed to proceed. Such a policy is difficult to establish and administer, as students come from far and wide and grades from other colleges are by no means uniform in their significance. The most critical level is at admission to junior standing; serious consideration should be given to basing admission at this point partly on tests, particularly for students whose academic records indicate poor or marginal prospects for success at Illinois.

¹⁸ Study 7.

¹⁹ See Table 4, items 4 and 5.

²⁰ Study 11.

SCHOOL-UNIVERSITY RELATIONS—RECRUITING, COUNSELING

A superior program of school-University relations, including articulation, counseling, and recruiting, consists of numerous parts appropriately related and comprehensive in combination. Seven interrelated major elements, which the University should support and promote vigorously, will be discussed:

Mutual Understanding Between Schools and University. The University should encourage in every possible way the development of increased understanding by University people of the role and problems of secondary schools, and by secondary school people of the role and problems of the University.

University offices can do and are doing a great deal.²¹ A notable example is the series of conferences on school-University articulation, sponsored by the Joint Committee of the Illinois Association of Secondary School Principals and the University, on school-University relations which have provided an effective means for enabling school and University personnel cooperatively (1) to identify specific problems which students face in their transition from high school to the University, and (2) to formulate definite steps which the University and the high schools should take to help students make the transition.

Counseling in the Schools. The first approach to improving student quality in the University is counseling in the high school. A clear statement to high school counselors regarding qualities desired in a student, comparable to those now distributed by a number of other colleges, is a first step. The handbook of the University of Michigan is particularly remarkable. It sets forth the general requirements and, in addition, by presenting a selection of attractive brochures covering various occupational and scholarly fields, brings to the attention of the superior student curricula which he might never have considered. Such a handbook is at the same time a means of indicating the difficulties that the ill-qualified applicant can anticipate and of enlisting the avid interest of the well-qualified pupil.

Information for Prospective Students. In addition to providing information through high school counselors, the University can do a great deal to inform the prospective student directly of the opportunities offered in the University and the demands that study in the University will make upon his talents and energy. It is necessary to give the prospective student an accurate view of higher education. Much is already being done through visits to high schools, films on "Student Life" and "Voices of a Great University" (financed by the Alumni Association), and material and programs prepared by various colleges and departments. The College of

²¹ Study 4.

Veterinary Medicine, for example, has been encouraging high school advisers to bring to the campus pupils who might thereby be encouraged to consider University education in that field. A more enticing program could be developed in the form of a Health Professions Day which would expose selected pupils to the excitement of all University activities in life sciences and health professions. Such activities would replace sporadic and sometimes competitive recruiting by the many divisions of the University with a coordinated service to the high school student who is looking for guidance.

The open houses held by the Colleges of Engineering and Agriculture and the Junior Academy exhibit of high school science projects bring to the campus large numbers of high school students. They serve useful purposes but by their nature cannot be concentrated on giving the prospective student an accurate picture of University life and education. There should be other occasions, such as the Health Professions Day suggested above, specifically directed to able and interested high school juniors and seniors.

Information about the University should place considerable emphasis on those fundamental areas of learning which are less fashionable at present than engineering and physical science. Many sources of evidence indicate a potentially serious unbalance in the interests of able high school students and too great an emphasis on applied knowledge among our own students. The opportunities for a satisfying education centering in social science, in the arts, or in the humanities need to be presented enthusiastically to prospective college students, the more so because pupils in many Illinois communities have no opportunity to observe or to hear about high-level work in these less-publicized fields.

Preparation for University Education. Counseling and information about University education are not enough; the student must be academically prepared to enter the University. The University should continue its efforts to work with high schools to improve the coordination of subject matter and grading standards. The kind of effort is illustrated by the work of the English Department with high schools before dropping the course in remedial English for freshmen and by the efforts of the Department of Mathematics and College of Engineering in helping the schools to prepare students for increased entrance requirements in mathematics for engineering freshmen.

Much can be done to aid teachers to encourage a more intellectual atmosphere and the development of sound study and work habits in the high school. Merit finalists the committee has questioned make strong criticism of the apathy that pervaded some of the most basic studies.²²

²² Study 10.

High schools are making increasing efforts to lift the able pupils out of routine and into challenging programs. This University, by encouraging exceptional high school pupils to enroll in one or more University courses and by accepting credit earned in the Advanced Placement Program sponsored by the College Entrance Examination Board, is contributing to this movement.

Recruiting Superior Students. Since the University is in a unique position among public institutions in the state in respect to advanced and professional education, it should give particular attention to attracting students who can complete a four-year program and especially to those who appear to have the potential for graduate and professional education. This aim should be reflected in its efforts to inform prospective students about the University and to articulate its programs with those of the high schools.

One force which is not now fully mobilized in recruiting superior students is the faculty. Some members of the faculty now locate good students and have much success in interesting them in the University. Such efforts by a large segment of the faculty would attract many additional superior students to enroll.

Our Alumni Association is another source of increasing assistance. The *Alumni News* publishes a great deal of information about the University's educational programs and its distinction in many fields of work. Members of the association can assist by locating superior students and encouraging them to consider the University of Illinois, and can make an even greater contribution by raising scholarship funds.

While directing its thoughts towards the high school and toward making increased scholarship and loan funds available to encourage superior students to attend the University, the faculty should bear in mind that not even the most vigorous sales campaign can succeed for long unless there is a good product to sell. The University, in inviting an able student, has the obligation to offer him an excellent educational experience. The faculty may not be entirely happy with the student body but a talented segment of the student body is not entirely happy with the faculty and the University. Studies of student opinion, including the opinions of extremely able students,²³ indicate that the educational program offered the entering student leaves something to be desired. The University should aspire to attract the first-rate student but to do so it must merit that student's interest. A grapevine spreading tales of intellectual adventure will bring the desirable student to the campus; a grapevine report of dull mass education, extra-curricular fun to the exclusion of all else and a faculty indifferent to the student will bring in those who do not want to be challenged.

²³ Study 10.

The University has a job to do in encouraging continued interest in education among its own students. The most serious loss at present is the number of able women who leave the University after one, two, or three years of successful work. There is also substantial loss among men of good ability, although the male dropouts tend to have poorer scholastic records. No single line of attack can ensure that most able sophomores will go on to graduate, particularly since broad cultural trends underlie the different educational patterns of men and women. It does appear that in a University where the student has little personal contact with senior faculty until he attains status as an advanced departmental major, a special effort to identify and encourage able sophomores would reduce withdrawals. The James Scholar program is a highly commendable step in this direction, as is also the recent strengthening of the advising procedures which permits a careful periodic review, in conference with a faculty member, of the educational plans of every student in a somewhat more personal atmosphere than the rush of the registration period allows. Such efforts need to be continually reinforced and encouraged.

Scholarship and Loan Funds. Scholarship and loan funds are much needed to enable superior students to attend the University and will have to be increased as both enrollment and the quality of applying students increase.

Forty-six per cent of the new freshmen entering the University in 1959 from the upper 20 per cent of their high school classes received scholarships. There was a considerable disparity between the percentage of new freshmen holding scholarships in the various colleges. For example, considering only colleges having a total enrollment of new freshmen in excess of 125, it was found that 50 per cent of all new freshmen registering in the College of Agriculture held scholarships while only 12 per cent of new freshmen entering the College of Education held scholarships. Discrepancies such as this arise in part because some scholarships are restricted to particular areas of study. Moreover, records of performance show that holders of especially restricted scholarships (e.g., Agriculture, Military, Child of Veteran) did not perform as well in the University as those holding nonrestricted scholarships. Scholarship funds added in the future should be available for awards to applicants on the basis of need and ability and not restricted in other ways.

Every effort should be made to remove financial barriers to a college education and to provide each able high school student the opportunity to pursue higher education to the limit of his scholastic ability. A study of the financial needs of present students (excluding Graduate and Professional Colleges) indicates that an additional \$1,000,000 is needed annually in scholarship and loan funds for our present student body. Many

able students are forced to discontinue their education due to financial difficulties.

More factual information concerning this problem and the related one of determining how many able students never enter college due to lack of financial resources can be derived from the recent study, *Student Economics at the University of Illinois*. The study analyzes the income and expenditures, in the second semester of 1959-60, of approximately 700 students who kept detailed records according to schedules provided for the purpose. The analysis showed, for example, that a single student spent \$872 during the semester on the average. His funds came in approximately three equal parts from earnings or scholarships, relatives, assets, or borrowings. The average expenditure of a married student was \$1,734 during the semester. Items accounted for included food and housing, personal and medical care, tuition and fees, textbooks and supplies, recreation, transportation, miscellaneous. The study will provide a better base than was previously available for estimating the need for individual and total scholarship and loan support for students at the University of Illinois.

Our estimate for future needs, based on forecasts of enrollment through 1969 is \$3,000,000 annually in scholarship funds. This estimate, as in the case of our estimate of needs to take care of current enrollment, does not take into account the unknown number of able students who never begin college due to lack of financial resources. The state and the University are to be commended for their present efforts to provide increased financial aid to able students; such efforts should be increased.

Studies Concerned with Improved Articulation. The sponsorship of studies concerned with improved articulation in secondary schools and in the University is necessary in a sound program of school-University relations.

The need for improving the quality of transfers was pointed out earlier, and this clearly calls for an expansion of efforts toward articulation now being made, particularly with junior colleges. One aim of this effort should be to make clear to both students and faculty the demands of the University, so that students will not transfer to the University if their chances for success are slim. A second aim is to ensure that courses given elsewhere which are intended to prepare students to transfer into advanced courses at the University are truly comparable in instructional pace and grading standards to the comparable University work.

Appendix II. Recent Developments and Long-Range Plans: Statements from the Colleges and Divisions

In its *First Report*, in 1958, the University Study Committee on Future Programs attempted to outline the aims and responsibilities of high priority on which all of the diverse segments of the University could appropriately focus. In this report it has developed some of the general conditions for meeting these aims. In keeping with the theme, "Educational Directions," the present report has also described and commented on a number of developments in policy, plans, and program since the *First Report*.

The real work of the University is of course what the faculty and students actually do at the college and departmental levels. In order to present some account of educational directions at the working level, the Committee has asked each major division and college of the University to prepare a brief statement for publication in an appendix to the report. No formal outline or set of questions was proposed. It was suggested that the statement could include the aims of the division, recently initiated programs and plans for future development.

The response has been excellent and the statements, as prepared by the colleges and divisions of the University, are presented here. The name of the dean or director is given at the end of each report, although in many cases other members of the faculty had a large part in the preparation.

UNIVERSITY OF ILLINOIS AT CONGRESS CIRCLE, CHICAGO

For sixteen years the University of Illinois, Chicago Undergraduate Division, has maintained an educational program in temporary quarters on Navy Pier. This program, which has served over 100,000 young men and women, will provide the basis for expansion into a full four-year degree-granting program at the new University of Illinois campus in Chicago. Permanent facilities will be built at Congress Circle—the junction of the Congress, Northwest and Dan Ryan (South) Expressways.

The campus will open in September of 1964. At that time, junior year work will be offered leading to degrees from two colleges—the College of Liberal Arts and Sciences and the College of Commerce and Business Administration. Senior-year curricula in these areas will be added in the fall of 1965.

Only these two colleges will grant degrees at the initial commencement exercises in the spring of 1966.

Two other colleges—which initially will offer work mostly to freshmen and sophomores—will also be established at Congress Circle. These are the College of Engineering and the College of Fine and Applied Arts. The initial academic organization at Congress Circle also will include two other units—the Division of Education and the Division of Physical Education.

In the Division of Education, courses sufficient to meet the requirements for secondary school teacher certification will be offered, but—again initially—no degree programs in education as such are planned. Teacher-training curricula will be offered in the departments of the several colleges which administer the subject matter fields taught in the secondary schools. The Director of the Division of Education will be the coordinator of the teacher-education program in the several colleges and will supervise the course in education offered by the Division of Education. Degree programs in education will be introduced if and when it is established that the facilities of existing teacher-education institutions in Chicago are unable to meet the needs of the community.

In the initial phase of development of the Congress Circle campus, provision will be made for existing programs in physical education, and recreational activities also will be provided—the latter primarily through the facilities of a Union. As funds and space become available, two departments offering degree programs in this Division are proposed: Physical Education for Men, including health education and recreation; and Physical Education for Women, including dance.

Military Science (Army Reserve Officers Training Corps) will be of-

ferred on a voluntary basis. Courses will be provided to accommodate freshman and sophomore men in basic training in 1964 and junior and senior men in advanced training in 1965 and 1966 respectively.

Also, that portion of the Jane Addams Graduate School of Social Work now located at the University's Medical Center campus will be moved to Congress Circle, with no change in the present administrative arrangements.

The educational program broadly described above should enable the University to meet the most immediate and pressing needs—those related to the undergraduate enrollment demand created by population increases and by the rising proportion of high school graduates seeking admission to college.

This will be the primary mission of the expanded Chicago division of the University and will have priority over all other claims upon the space and operating funds available to the division.

The College of Liberal Arts and Sciences will be organized in sixteen departments, with each offering majors leading to bachelor's degrees, and including teacher-training curricula where feasible. The departments will be:

Biological Sciences	Music
Chemistry	Philosophy
English	Political Science
French	Psychology
Geography	Russian
Geology	Sociology and Anthropology
German	Spanish
History	Speech and Drama
Mathematics	

The Department of Biological Sciences will offer courses in botany, microbiology, physiology, and zoology. The Department of English will offer courses in rhetoric, literature, and journalism. Limited offerings also are tentatively planned in Chinese, Greek, Italian, Latin, and Portuguese. The course offerings in all the above departments will include those subjects required for students in pre-law, pre-medicine, pre-dentistry, pre-pharmacy, pre-nursing, and pre-veterinary medicine.

No formal curricula will be offered in music, but service courses will be available in history of music, music education (excluding individual instruction), chorus, band, and orchestra.

In the College of Commerce and Business Administration, all majors in all fields of concentration will be combined into five degree-granting departments:

Accountancy	Marketing
Economics	Management
Finance	

Courses in business law, business administration, and business education will be included in the Department of Management.

Discussions and study of the basic philosophy of engineering education and its relation to the new requirements of the profession are leading to major changes in college curricula. Continuing study is being given to the organization of the college. At present, it is proposed to organize it in five basic departments:

Department of Physics

Department of Materials Processing

Department of Information Processing

Department of Energy Processing

Department of Systems Analysis and Design

Educational and industrial leaders are being consulted, and a final program will be ready well in advance of the 1964 opening of the campus. Only a two-year program will be offered initially but it will be structured to permit easy expansion into a four-year degree program.

Two departments—the Department of Architecture and the Department of Art—will form the College of Fine and Applied Arts in the initial phase. In the latter department, formal curricula will be offered in art education, art history, painting, and industrial design. All curricula in the college will be limited to work of the first half of the baccalaureate programs, and the required courses leading to the granting of bachelor's degrees probably cannot be offered until after 1966, unless funds beyond those provided in the Universities bond issue of 1960 can be obtained. Availability of space and the demand for these courses over and above what is available elsewhere in the community also will be determining factors in expansion of this college.

Future developments on the new campus will not be limited arbitrarily by any of these initial proposals. The educational needs of the Chicago metropolitan area, the degree to which these needs can be met satisfactorily by existing institutions and programs, and the availability of resources will be the controlling considerations. The University will keep the problem of further expansion and educational development under continuing study and will propose such changes as seem justified by the total educational situation in the metropolitan area.

This educational program will be housed in an unusual, if not unique, physical plant. In a dramatic departure from traditionalism, designers of the Congress Circle campus have planned special purpose buildings to serve functions rather than disciplines. Each university activity will be housed in the type of structure which can be utilized most efficiently and economically.

The bulk of the University will be housed in a campus core of only 40 acres; the total campus consists of only 106 acres. Thus, the campus will

be one of the most intensely utilized educational institutions in the nation. It will grow rapidly—opening to 9,000 students and expanding for another 11,000 in six years— and, therefore, expansibility will be one of the keynotes of the initial phase of construction.

Sixteen buildings will make up the campus in the initial phase. These are:

A lecture center in mid-campus, housing seminar and lecture rooms ranging in capacity from 75 to 500.

A portion of the library, which eventually will house one million volumes. The union complex, including one low- and one high-rise building, the latter of nine stories.

Two clusters of classroom buildings, each cluster made up of three three-story structures. One cluster will be north of the lecture center, one south. A portion of the science and engineering laboratory, just beyond the classroom cluster on the south.

A 28-story faculty and administrative office building, northwest of the lecture center.

The physical plant unit of three buildings to serve the whole campus, to be built in the triangle within Blue Island, Roosevelt, and Morgan Streets. The restored Hull Mansion at the union entrance.

Also included in this phase will be two parking areas, partially depressed below ground level—one on the southeast and the other on the northwest. Additional stories will be added to these in later phases until they are brought to a capacity of 3,000 cars each. A 200-car lot will be built on the east side, in front of the Union.

Phase II of construction is scheduled for the period 1964–69 and will include the following additions:

An addition to the library.

An addition to the science and engineering laboratory.

A 14-story science and engineering office building, just south of the library and just west of the science and engineering laboratory.

A fine and applied arts laboratory, northwest of the faculty and administrative office building.

A physical education building.

A third phase of construction—scheduled after 1969—will include graduate, research, and service facilities—including two 11-story buildings, one east of the science and engineering laboratory, and the other in a small cluster together with two low-rise buildings to be erected east of Racine, between the Congress Expressway and Harrison Street; also, an auditorium and next to it an exhibit gallery, just west of the faculty and administrative office building.

The center of the campus—where its most intense activity converges—will be known as the Great Court, actually the roof of the lecture center, which will provide a natural gathering place for students on their way to and from classes, the library, or the union complex. In its center will be an open amphitheater which can be used for outdoor concerts, with a seating capacity of 2,500.

An express walkway will connect all campus buildings at both first and second story levels. Free of all but pedestrian traffic, this walkway will facilitate the traffic flow through the campus and also provide for security. It will connect with the new rapid transit station at Peoria Street and with both parking lots.

One of the most interesting features of this entirely new campus will be Hull House—built in 1856 and one of the most famous buildings in the world because of the work done there by Jane Addams and her colleagues. It will serve as a functional unit for small groups and conferences—with special emphasis on the activities which reflect Jane Addams' work—and as a spiritual beacon expressing the meaning and purpose of an urban land-grant university in the mid-twentieth century.

NORMAN A. PARKER
Vice-President

UNIVERSITY OF ILLINOIS AT THE MEDICAL CENTER, CHICAGO

Introduction

The world's foremost concentration of health services is in Chicago in what is known as the Medical Center District. Within the district an intensive transformation continues as one of Chicago's heavily deteriorated sections rapidly becomes a 305-acre area of fine medical facilities. The University of Illinois occupies a central geographical position in the Medical Center District and adds its own measure of distinction to the medical pre-eminence of the area.

The colleges of Dentistry, Medicine, Nursing, and Pharmacy are the basic units offering instruction leading to degrees in the health professions indicated in the names of these colleges. In addition, a degree program is available in Occupational Therapy. A division of the University's Graduate College is located at the Medical Center campus and offers Master of Science and Doctor of Philosophy degrees in a variety of fields related to the health sciences.

Enrollment in these several educational programs was 2,146 as of October, 1961.

Work in Medical Art is currently offered on the campus but without a degree program. However, plans are in progress for such a program as a joint venture of the College of Fine and Applied Arts and the Department of Medical Illustration at the Medical Center campus.

The University of Illinois Research and Educational hospitals continue their role of patient care and in addition participate actively in research and teaching. The latter is at an undergraduate and post-graduate level including internships and residencies. The importance of the University's hospitals to the health care of the citizens of the state is sharply pointed up by a few simple statistics: nearly 170,000 patient days of hospital service each year; more than 7,000 surgical operations each year; more than 20,000 emergency service visits each year; more than 190,000 outpatient clinic visits each year; and nearly 800,000 laboratory tests related to research and patient care each year.

Special research facilities at the Medical Center campus include the Aeromedical Laboratory, Drug and Horticultural Experiment Station (at Lisle, Illinois), and the Library of Medical Sciences. Also a part of the Medical Center campus are the Medical Research Laboratory, the Institution for Tuberculosis Research, and the Chicago division of the Jane Addams School of Social Work.

The Division of Services for Crippled Children of the University of Illinois is the official state agency established to provide diagnostic serv-

ice and treatment for children who are crippled or have conditions which may lead to crippling. The goal of this program is to help physically handicapped children reach their full potential and, to the extent of their abilities, become contributing members of society. In providing these services, the division cooperates with many health specialists, hospitals, and agencies in this state and with the United States Children's Bureau. Over 250 clinics are conducted yearly in about forty different communities scattered throughout the state.

There are problems of recruitment both of staff and of students because of the nature of the area in which the campus is located. Although there has been marked improvement in recent years, the question of personal safety still exists. More police protection, better street lighting, rerouting of CTA buses and improvements in CTA elevated stations, and the provision of a University-operated escort service all have been instrumental in the improvement noted.

Housing for University personnel in the immediate area also continues to be inadequate. The present University-owned apartment building is not large enough to meet the demand. Plans are underway for the construction of another apartment building in the near future. The lack of adequate schools in the area for children of University personnel is also a related problem. Many persons who might desire to live close to the campus do not consider it feasible if they have children of school age.

While parking is perhaps a concern of most college campuses, it is a particular problem in a large metropolitan area. Land is a scarce commodity in any large city, and it is particularly so in the heart of a medical center district. For the 1961-62 academic year, a pay-parking plan was instituted in an attempt to acquire reasonable funds with which to upgrade parking. Several improvements have been made, and the plan is working well.

The new campus at Congress Circle is looked forward to with much anticipation by all at the Medical Center campus. The opportunity for cooperation and interchange is an appealing prospect. As the new campus grows so also will the Medical Center campus grow. Plans for a new Chicago Illini Union building is an exciting new project which has been under study during the past few years. Construction has just begun on the Medical Sciences Addition, a unit which will house primarily the basic science departments of the College of Medicine but which will serve other purposes as well. Other buildings planned for the near future include a Physical Services building, an addition to the East Dentistry-Medicine-Pharmacy building, and a Library-Administration building.

In all plans for new buildings and parking the Medical Center Commission plays an important role, for it is its responsibility to acquire and demolish deteriorated structures in the district and to make the land

available to the University and other institutions. The Medical Center Commission figures prominently in the ability of the University to acquire land areas so that it may solve its building needs.

Recently the name of the campus was changed from the "Chicago Professional Colleges of the University of Illinois" to "The University of Illinois at the Medical Center, Chicago." Though the name has changed, the general goal of the campus remains the same—to provide excellence of education in the health sciences, to conduct research programs designed to extend the boundaries of medically related knowledge, and to provide health care to the citizens of Illinois through its clinics and hospitals as these relate to its primary functions of teaching and research.

College of Dentistry

The College of Dentistry became affiliated with the University of Illinois in 1901. It was founded in 1892 as the Columbian Dental College, becoming in 1898 the Illinois School of Dentistry. In 1913 the College of Dentistry became an integral part of the University of Illinois. The college admits 90 new first-year students each year and had an enrollment in October, 1961, of 357 students in the four-year program leading to the degree of Doctor of Dental Surgery. There are three dental schools in Illinois and forty-seven in the United States.

Recently Instituted Programs

1. A cooperative plan was initiated whereby dental students at the University of Illinois may pursue graduate work on a part-time basis in the field of education at the University of Chicago leading to a degree of Master in Education. Such highly qualified people will help immeasurably in strengthening dental education.

2. There has been continued activity in re-evaluating the teaching and study of dentistry. Two new programs have been introduced. The first is the use of closed-circuit television which magnifies for an entire class minute fields of study and technical performance comparable to bringing a small object into view with a dissecting microscope. The second is the development of a vertical program of courses which will deal primarily with the social aspects of dentistry, *viz.*, history, ethics, public health, etc. Such a program should serve to indicate to the student his responsibilities to a community at large.

3. A graduate program has been established in the fields of Oral Histology and Biology for qualified dentists who wish to prepare themselves for a career in dental teaching and research.

4. A dental assistants' program has been in operation for the past three years. This has been supported in part by the United States Public Health Service. Its objectives have been twofold: (a) to provide the educational

facilities to train dental assistants and (b) to teach the undergraduate dental student the effective use of such auxiliary personnel.

Planned Future Programs

1. In continuing the leadership of this college in dental research, a center will be established where qualified dentists from other institutions can obtain advanced training in this field. This program has been planned in close cooperation with the Graduate College.

2. Research in the prevention of oral diseases, limited in its scope because of the critical shortage of physical facilities, will be expanded as soon as more space can be acquired.

3. The education of dental assistants and dental hygienists will be broadened so that such trained personnel can be of greater assistance to the practicing dentist in rendering more efficient dental health service.

4. Student counseling will be restricted to highly motivated faculty members who volunteer for this activity. They will be aided in these duties by seminars to be conducted by psychologists and psychiatrists.

5. A well-organized group of interested faculty members is prepared to increase recruitment of students into the study of dentistry through diverse means.

6. An elective program for the best students is to be established in order to afford them the opportunity for advanced studies in dental education, research, and practice.

College of Medicine

The College of Medicine was originally an independent institution. It opened in 1881 as the College of Physicians and Surgeons of Chicago. It became affiliated with the University of Illinois under a lease in 1897, and in 1900 its name was changed to the College of Medicine of the University of Illinois. Not until 1913 did it become an integral part of the University of Illinois. The College admits 200 new first-year students each year and had an enrollment in October, 1961, of 767 students in the four-year program leading to the degree of Doctor of Medicine. There are five schools of medicine in Illinois and eighty-six in the United States.

Recently Instituted Programs

1. In 1957 it was made mandatory that all sophomore and senior students take Parts I and II respectively of the Medical National Board Examinations as part of their final correlation and comprehensive examinations. This has provided a means of evaluating the effectiveness of the departmental teaching programs and student performance at Illinois in relation to other medical schools throughout the nation.

2. In 1958 the Student Research Forum was instituted as a continuing annual affair. Each year, one day is set aside during which stu-

dents engaged in research can present scientific papers to their student colleagues and to members of the faculty. The program is drawn up and conducted by medical students in a manner comparable to that of local or national meetings, including student guest speakers and the display of scientific exhibits. This program seems to have extended student interest and understanding of research and its relationship to the education and practice of medicine.

3. In 1959, with the financial aid of the Commonwealth Fund, an Office of Research in Medical Education was established, under the able guidance of George E. Miller, M.D., Director, and Lawrence Fisher, Ph.D., Associate Director. This program, unique for a medical school, has progressed at an unexpected rapid pace in many meaningful directions. Its objectives have been:

(a) To improve the effectiveness of the undergraduate instructional program and to provide a curricular pattern which may prove beneficial to other medical colleges having similar characteristics.

(b) To study the needs and training requirements of personnel other than physicians in the complete care of the patient and in the manner in which the College of Medicine can provide such skilled personnel.

(c) To determine how the hospitals and medical institutions of the West Side Medical Center can be best utilized in the training of physicians and paramedical personnel.

(d) To determine how the College of Medicine can best utilize the other departments of the University at Urbana and at Navy Pier toward achieving the objectives in (a) and (b), and how the College of Medicine, in turn, can contribute to their programs.

This program has been a powerful force in molding the thinking of the faculty along the lines of improving the climate for learning in the Medical School and of establishing meaningful standards to determine student performance.

4. The recent merger of Presbyterian and St. Luke's hospitals into a single large general hospital in the West Side Medical Center, affiliated with the University, has broadened the scope of the College of Medicine in the integration of undergraduate and postgraduate teaching and in research.

Planned Future Programs

1. Plans have been laid for expansion of educational activities of the College of Medicine in the allied health science fields, (medical technology, physical therapy, medical record librarianship, etc.). These programs should be instituted promptly to meet an urgent need in medical care programs in the state and nation.

2. Plans have been approved and funds appropriated for the con-

struction of an addition to the building which now houses the basic medical science departments. This construction will represent an important first stage in the correction of the handicaps in physical facilities under which these departments have labored.

3. Plans have been made to move the Illinois Eye and Ear Infirmary into a building to be constructed on a site adjacent to the Research and Educational hospitals. This new location will permit closer worker relationships in teaching, research and patient care programs than is now possible in the fields of Otolaryngology and Ophthalmology.

4. It is the intention of the faculty of the College of Medicine to expand as rapidly as possible its programs of continuing education for physicians of Illinois. It is hoped that this program can be developed in collaboration with the staffs of a few strategically located community hospitals.

College of Nursing

The program leading to the bachelor of science degree in nursing was started at the Medical Center campus when a class of 12 entered the newly created School of Nursing in September, 1954. The first degrees were awarded in 1957 to eight graduates. In 1959 the name was changed from "school" to "college." In October, 1961, fifty students, the largest group since the beginning of the College of Nursing, began their studies. There are three collegiate schools of nursing in Illinois and 104 in the United States.

Planned Future Programs

1. The major concern for the future planning of the College of Nursing is the development of a curriculum leading to the master's degree for the preparation of teachers in clinical nursing. The College of Nursing has recently received grant support for the development of advanced theory and practice in psychiatric nursing, so the possibility of offering this program has been increased.

2. The College of Nursing plans to continue some of the workshops for graduate registered nurses. Future plans are for:

(a) An institute for educational directors in hospital schools of nursing.

(b) An intensive workshop in nursing care and the teaching of nursing care for patients with chronic diseases (cardiovascular, tuberculosis, carcinoma, etc.).

College of Pharmacy

The College of Pharmacy was originally an independent proprietary institution before becoming affiliated with the University of Illinois. It was established eight years before the University of Illinois was incorporated. In 1896 it became the School of Pharmacy of the University of

Illinois and in 1932 its name was changed to the College of Pharmacy. In October, 1961, the College had an enrollment of 472 students, working toward the Bachelor of Science degree in Pharmacy. The college is the only one of its kind in Illinois, although there are 75 schools of pharmacy in the United States.

Recently Instituted Programs

1. In 1949 an extensive survey of the profession of pharmacy indicated the need to strengthen and/or revise the curriculum in pharmacy in the area of general education, biological sciences, pharmaceutical administration and technology. As an outgrowth of this survey, the College of Pharmacy in 1960 established a five-year sequence for the degree of Bachelor of Science in Pharmacy, *viz.*, one year of preprofessional study in a junior college, college, or a liberal arts and science division of a university and four years of pharmacy proper.

2. A series of lectures on "Modern Pharmacy" has been organized by the faculty of the college and has been offered to the pharmacists of the state. The Extension Division of the University has assisted in the details of printing and management of these lectures. These have been designed to bring expert knowledge on new therapeutic agents to pharmacists at large who in their everyday practice are called upon to pass judgment in the use of these agents.

Planned Future Programs

1. In keeping with the kind of general and professional education requisite for the profession of pharmacy, it is planned to increase the educational requirements from the present five to six years. This would include two years of pre-pharmacy training in the liberal arts and sciences and four years of pharmacy, ending with the granting of a degree of Doctor of Pharmacy.

2. There are plans to increase the number, frequency, and scope of extension lectures to pharmacists of the state.

3. Since the State Board of Pharmacy requires that each candidate for licensure must have the equivalent of one year in-service training in a pharmaceutical establishment above the regular college course, plans are afoot to standardize this type of extra-curricular training. Currently, the quality of such in-service training has varied from excellent to poor depending upon the inclination, ability, and resources of the pharmacist-preceptors. The plans drawn up by the College of Pharmacy call for a syllabus which would outline the type of training that is essential for student pharmacists. Able pharmacists would be recruited and appointed as nonsalaried clinical members of the faculty who would supervise the students in keeping with the outlines of the syllabus. In time, these extracurricular activities could become a part of

the curriculum of the college comparable to the required clerkships in medicine. Before this could be done, however, the program would have to be acceptable to the Department of Registration and Education. This latter body appoints the members of the State Board of Pharmacy.

4. With the strengthening of the staffs of some of the departments, there are plans to broaden the scope and to intensify the programs in graduate education. This would include the granting of a Ph.D. degree in Pharmacy and a master's and doctorate degree in Pharmacology in addition to the higher degrees now granted in Pharmaceutical Chemistry and Pharmacognosy.

JOSEPH S. BEGANDO
Vice-President

GRADUATE COLLEGE

General Comments

It is quite impossible to separate the activities of the Graduate College from those of the University as a whole, even for purposes of discussion of recent accomplishments and future programs. The faculty of the Graduate College is drawn from the various departments and each member continues to serve his department and through it the undergraduate or professional college of which it is a unit. The programs of study pursued by graduate students require them to take courses and carry on research within the departments. In most instances the individual graduate student carries out work in two or more departments, and it sometimes happens that the fields of his major, first minor, and second minor interests fall in departments that represent three different colleges. Clearly, the Graduate College is concerned with the programs of all the other colleges, and whatever degree of distinction it can attain must be a measure of the excellence of the University. By the same token, every improvement in education at the graduate level, whether initiated in the departments or in the Graduate College, is a credit to the entire University.

The primary concern of the Graduate College is with the quality of instruction, facilities, and research guidance available to graduate students. The Executive Committee of the Graduate College exercises control over the offering of graduate courses and curricula, with the advice of its Committee on Courses and Curricula. Upon the recommendation of its Committee on Staff, the Executive Committee and the Dean also appoint members of the staff to the graduate faculty so that they may teach graduate courses and direct graduate thesis work. As mentioned elsewhere in this report, during the period from October, 1957, through February, 1961, the Graduate College approved new degree programs in fourteen fields (both Ph.D. and master's programs were approved in three of the fields) and added two fields to the list of approved minors. Less spectacular but perhaps even more significant progress resulted from the approval of 487 course changes (including modifications of existing courses as well as new courses) and the approval of 342 nominations to the graduate faculty during the same period.

In evaluating courses, curricula, and staff appointments, the Graduate College acts principally on proposals initiated by the departments. In its search for improvement of the quality of graduate instruction and research guidance, it also takes positive action on its own initiative. These steps are concerned with increasing the caliber of entering graduate students, increasing the opportunities available to graduate students, increas-

ing the opportunity of the staff to carry on creative scholarly work, especially in collaboration with graduate thesis research, and increasing the attractiveness of the University as a center of scholarly and research activity, not only out of concern for the productivity of the present staff but also as a means of improving the University's competitive advantage in acquiring distinguished new staff members.

Fellowship Programs

Student Fellowships. University fellowships, teaching fellowships, and tuition and fee waivers are awarded on the basis of University-wide competition and without reference to the applicants' fields of major study. Other awards, sponsored by the federal government or by industries, are available only to students studying in specified areas, but even in these cases the Graduate College screens applications to make certain that only highly competent individuals become fellows. The competitive manner in which fellows are selected provides assurance that awards are offered only to those students who appear most likely to add strength to the graduate programs in which they enroll.

For highly promising students not already enrolled in the Graduate College, financial assistance undoubtedly serves as an inducement to come to this University. As Bernard Berelson notes in *Graduate Education in the United States*, graduate students have learned to expect financial assistance, and in most cases this expectation is realized. Berelson cites a recent survey which indicates that more than 50 per cent of the students in 12 major graduate colleges have held fellowships, and most of the remainder have received other forms of financial assistance. According to Berelson, graduate colleges are increasingly forced to compete for the best students through the attractiveness of the stipends they offer.

Recent experience at this University supports this appraisal of the national situation. Although we have no systematic data concerning the number of institutions to which our own entering students have applied, it is increasingly apparent that many of them have received attractive fellowship offers from other universities. Indeed, students who decline our fellowship offers not infrequently cite more remunerative awards at other universities as the reason. Between 1960 and 1962 the number of persons applying for graduate fellowships or teaching fellowships at the University of Illinois increased by 48 per cent. During that period the percentage of all applicants who could be offered University fellowships or teaching fellowships fell from 14 to 10.

The acceptance rates among applicants who were not already enrolled as graduate students at the University of Illinois were 41.1, 36.1, and 42.2 per cent for the years 1960-61, 1961-62, and 1962-63 respectively. The increase in the acceptance rate for the last year occurred principally

because 30 per cent of the University fellowships and teaching fellowships offered to new students for the academic year 1962-63 provided stipends which were \$500 larger than those offered any new student in 1960. Moreover, the awards for 1962-63 provided, at the option of the recipient, a stipend for a summer session as well as for the academic year. The attractiveness of this change in our University fellowship program is evidenced by the fact that almost everyone who accepted an award for the academic year elected to accept a summer stipend as well.

It is true, of course, that fellowship offers have been made only to applicants who have shown exceptional promise as graduate students and that these are the persons for whom other major graduate colleges compete most strenuously. But these are also the people for whom we must compete in the future if we are to maintain or increase the caliber of our students. An extensive and attractive fellowship program, a strong and productive teaching staff, and extensive physical facilities will all be needed if the University of Illinois is to improve its relative standing in this competition.

A number of the better students among those already enrolled in the Graduate College are offered fellowships comparable to those awarded to entering students. These fellowships are sponsored by the federal government, by state appropriation, by industries and private organizations, and by the University Research Board. Together with a limited number of tuition and fee waivers, these fellowships permit some of our most promising students to earn doctoral degrees more rapidly than would otherwise be possible. In addition, during each of the past two years the Graduate College has awarded 75 summer fellowships to students who have served as half-time teaching assistants. This support is intended to permit some of those who devote a substantial portion of their time to teaching during the academic year to concentrate their efforts on research and study during the summer months.

During 1960-61 only 14 per cent of the graduate students enrolled at the University held fellowships, whereas perhaps 30 per cent are scholars of outstanding promise whose contributions to society could be increased by fellowship assistance. These fellowship programs, which accelerate the progress of our best graduate students, have the effect of increasing the rate at which the University can contribute scholars to the state and nation. Perhaps this is the most appropriate single measure of the Graduate College's success.

Faculty Summer Fellowships. During the past four years the University Research Board has made funds available for the support of a limited number of faculty summer fellowships. Beginning with 22 fellows in 1957, the program has grown steadily, and in 1962 the number of awards was 38. These fellowships carry a small, tax-exempt stipend which permits

junior faculty members to devote full time to scholarly endeavors during the summer months. Because of the heavy teaching loads and relatively small salaries of instructors and assistant professors, aid of this type is often essential to the junior faculty person who is attempting to conduct significant research. Formal reports by those who have held such fellowships in the past indicate that recipients almost invariably make substantial progress on their research during the time made available to them by their awards. The benefits of this program to the University and society are difficult to evaluate, but there can be little doubt that it accelerates the work of young scholars, contributes to the prestige of the staff, and increases the usefulness of the recipient to the University. It also has a positive effect on the morale of junior staff members, for whom it symbolizes the University's interest in their work. Its value is greatest in the various fields of the arts, the humanities, and the social sciences; of the awards made in 1962 some 75 per cent were to faculty members in these fields, the remainder to those in the pure and applied sciences.

Financial support for continuity and expansion of this program should be assured for future years. The Research Board has appreciated these needs and has been generous in its support, but funds available to the Board are subject to fluctuation, as are the demands upon those funds. The faculty summer fellowship program has now developed beyond the experimental stage, and its existence and value should be formally recognized by the assignment of funds which are commensurate with its contribution to the productivity, prestige, and morale of the University.

Center for Advanced Study

Assistance to distinguished senior members of the faculty is provided by the Center for Advanced Study. Established as a special unit of the Graduate College in 1959, it encourages creative achievement by providing incentives for the highest level of scholarly work. By negotiation with the head or chairman of his department, and with other appropriate administrative officers, a member or associate member may be relieved of some of the more routine functions performed by college professors and may devote an increased portion of his time to research.

Since 1959 the number of members in the Center has grown from four to five, and the number of associate members has increased from 2 to 14. No marked increase in either category of membership is foreseen during the near future. It should be noted that the past increase in membership has been financed largely by funds made available by the Research Board. It is hoped that such funds will always be available in the future, since the program has become one of the University of Illinois' true marks of distinction. Scholarly talent of the highest order should receive a priority which gives maximum assurance against the dangers inherent in competition with more tangible but less basic needs of the University.

University Research Board

Among the actions taken to increase the opportunity of the staff to carry on creative work have been many appropriations by the University Research Board. The assistance provided has taken many forms, including the purchase of research materials in great variety for use in many disciplines, the acquisition of newly developed scientific equipment, the modernization and remodeling of laboratories, the provision of travel necessary to research and scholarship, and the provision of funds for the exhibition of works of art, to present only an incomplete list. The assurance of funds for supplies and equipment has been an important factor in bringing to the campus established scholars who were thus enabled to change locations with minimal disruption of their research programs.

The research needs in the arts, humanities, and social sciences, relative to those in the biological and physical sciences, are greater with respect to personnel and less with respect to materials and apparatus. Thus, the number of research assistants supported by the Research Board in the former areas is approximately twice that in the latter. In addition, substantial support has been given to the Library and to the University Press for materials and services of principal value to the arts, humanities, and social sciences.

Digital Computer Laboratory, Electron Microscope Laboratory, Radiocarbon Laboratory

In the development of science it often happens that a technique or an instrument devised in one discipline shows promise of providing improved means of investigation in other areas. When the new procedures so arising are simple and inexpensive, there are not many problems in their utilization in whatever branches of science require them. But with the increasing technological sophistication of the present time, the new techniques are likely to be so exacting and the instrumentation so expensive that individual departments may lack the resources to exploit them. In such situations the Graduate College has created new units so that experts could be employed and facilities acquired for the use of all the departments concerned. Within recent years the most important such special units of the college have been the Digital Computer Laboratory, the Electron Microscope Laboratory, and the Radiocarbon Laboratory, the first two of which have grown extensively in the last five years.

The Digital Computer Laboratory provides an outstanding example of a unit of the Graduate College that carries on work of vital concern to nearly all departments of the University. An indication of its activity is to be seen in the fact that its principal computer, Illiac, was operated for some 8,330 hours, or approximately 347 twenty-four hour days, during the year ending June 30, 1962. Over the five years ending on June 30, 1962, its total staff enlarged from 46 individuals (about 43 FTE) to 116

individuals (about 96 FTE). The academic senior staff of the laboratory changed from 9 to 12 during this period, most of the increase being in academic staff below the rank of assistant professor and in nonacademic staff.

The five-year period ending June 30, 1962, has seen the development from the earliest planning stage to the actual construction and testing of key components of the new very-high-speed computer. During the last year arrangements were completed for the construction of an addition to the laboratory; with the aid of funds supplied by the National Science Foundation and the University; for the acquisition of a 7090-1401 computer system; and for the gift by the International Business Machines Corporation of input-output gear for the very-high-speed computer, a gift having a commercial value in excess of \$1,300,000. Complete fruition of these developments will bring a several-fold increase in the capacity of the laboratory and will keep it among the outstanding computer centers of the world. The increasing dependence of research in the physical and biological sciences on computer techniques, the growing recognition of valuable applications to research in the social sciences, and the need for instruction in computer technology for students in the applied sciences and in commerce make the services of the Digital Computer Laboratory invaluable to the University community.

Revolutionary changes in the study of matter at the molecular level have accompanied the development and refinement of the electron microscope during the last 20 years. The instrument is of especial value in the study of biological problems, although its utilization in other fields, such as solid state physics and metallurgy, has been so important as to become almost routine. To serve the research and instructional needs in these areas, the Electron Microscope Laboratory has steadily added to its facilities. During the past year it moved to the basement of Bevier Hall and added two new electron microscopes to the four older instruments acquired over many years. Finally housed in quarters suitable for electron microscopy, provided with microscopes of all the principal types and adequately equipped for both instruction and research, the laboratory is providing essential service to departments that do not have their own electron microscopes and expanded facilities to those that do.

The Radiocarbon Laboratory was created principally for the purpose of making available to University staff members the evolving techniques of unraveling the complex metabolic paths that constitute the chemical basis of life by observing the appearance of a "marked" carbon atom (a radioactive isotope of ordinary carbon) in various metabolic products when introduced into the living system as a part of a known nutrient. During the past five years the laboratory has expanded its services to permit studies with other marked atoms, particularly tritium, the radio-

active isotope of hydrogen. The expansion greatly extends the scope of the studies being made of biological questions, and it also permits more detailed examinations of the mechanisms by which chemical reactions occur. The services of the laboratory are regularly used by more than half a dozen departments.

Enrollment

The increase in graduate enrollment throughout the nation has been among the most striking educational developments of recent years. It results from many causes, of which the two principal ones are the explosive growth of science and technology and the beginning of a new chapter in the history of American higher education. The former calls for a vast increase in the number of research scientists, and the latter requires the addition of a formidable number of scholars in virtually all fields to the staffs of the nation's colleges and universities. The needs are so great that only a national catastrophe could be expected to stem the increasing enrollment of graduate students. A commonly accepted estimate is that the number of Ph.D. degrees granted annually in the United States will double between the years 1960 and 1970. If the number at Illinois increases at this rate, the enrollment of graduate students in 1970 will be between eight and nine thousand.

Whether the enrollment of graduate students at Illinois grows in consonance with the national trend will depend on the availability of additional facilities and upon the development of additional support, such as fellowships and research assistantships, for graduate students. It is expected that some of the needed support will originate in federally financed programs, both with respect to the construction and equipment of new laboratories and to the provision of additional stipends for graduate students. But such building programs may require that substantial matching funds be provided by the University, and both the building programs and the student support programs probably will be devised to benefit only certain areas of graduate work, thereby continuing and perhaps extending the present imbalance of federal support of graduate study. The best efforts of the University and the Graduate College will be required to maintain progress in graduate work in fields that do not receive significant federal support.

One way in which the number of Ph.D. degrees granted can be made to increase faster than the graduate enrollment is through increasing still further the quality of the entering graduate students. An average student almost always takes longer to finish his work than an excellent student; the economical use of facilities therefore calls for recruitment of the very best students. Efforts to improve the criteria for admission are unending. During the past two years new students have been required to take the

Graduate Record Examinations. This program will be continued until enough data have been collected to permit a study of the correlation of G.R.E. scores with success at the Ph.D. level at Illinois. If a reliable correlation can be established, the tests will be made part of the admission procedure.

Housing

As the competition for the best qualified students becomes more severe, increasing attention must be given to such matters as housing, recreation, and the availability of opportunities for intellectual stimulation and growth outside the classroom and laboratory. The Graduate College shares in and is a part of the overall cultural life of the campus community; efforts are presently underway to increase both the quantity and quality of housing available to graduate students.

Although there has been some improvement recently in the range of facilities available to married graduate students and part-time staff members, the housing of single graduate students continues to be a matter of major concern, and a program of continuing construction to provide for their needs is planned for the years ahead. The reception of the first Graduate Residence Hall, which provided housing for more than 500 students, has been most favorable and will be followed by a second development on the west side of the campus, providing facilities for 400 more single graduate students and scheduled for occupancy in 1965.

FREDERICK T. WALL
Dean

COLLEGE OF AGRICULTURE

The teaching, research, extension, and foreign service activities of the College of Agriculture and its component operating units are continually being evaluated and adjusted to meet the changing needs of families and a dynamic agriculture.

Major attention has been given to the state-wide cooperative extension program in agriculture and home economics. Following an intensive study in 1960, a complete revision of all extension projects has been effected and some changes have been implemented in the organization and administration of the program. To strengthen the in-service training program, a graduate program leading to the degree of Master of Extension Education has been approved.

The projection of agricultural and home economics extension into areas and activities beyond those of the farm and the farm home is illustrated by the 4-H and consumer education activities being carried on in the Chicago area and by projects dealing with public affairs, public health, and area resource development. These projects and other examples emphasize the need for integrating more fully the extension work in agriculture and home economics into the total fabric of the educational and public service effort of the entire University.

Courses and curricula are continually being revised. In several cases revisions have resulted from the consolidation of similar courses in the same or related departments. These consolidations and revisions typify the trend toward a more basic approach to subject matter which emphasizes fundamental principles and gives less attention to the applied or vocational type of subject matter. New curricula and majors in agricultural industries, agricultural communications, and foods in business illustrate the broadening of the concept of training beyond the bounds of the farm and the farm home. A major effort is being made to acquaint parents, high school administrators and guidance counselors, and prospective students with the broad range of career opportunities in agriculture, home economics, and related segments of modern society that are open to College of Agriculture graduates.

A doctoral program has been initiated in foods and nutrition; and the recently established four-year curricula in forest production and in wood technology and utilization have commanded much student interest as evidenced by rapid growth in numbers of students registering in these programs. A Master of Science degree in forestry for students desiring advanced work has been approved.

Honors seminars have been organized for students having outstanding

intellectual capacity and academic ability. These seminars are designed to broaden the participants' understanding of agriculture and human resources as they relate to society throughout the world.

Research in agriculture and home economics, administered through the Agricultural Experiment Station, continues to move in the direction of greater emphasis on studies of principles rather than the evaluation of technologic applications to current agricultural problems. This shift in emphasis results in a more intimate association with other research workers in other parts of the University. As the research by members of the agricultural staff shifts in emphasis, the range of applicability also broadens beyond that traditionally identified as agricultural. Thus many of the investigations are of increasing significance to engineering, public health, commerce, the social sciences, and the physical and biological sciences. Accompanying this extension of applicability is a corresponding broadening of the sources of funds for supporting such investigation.

It is anticipated that these changes in application and support will continue. The Agricultural Experiment Station has, however, along with other agricultural research agencies, the main responsibility for producing, processing, and distributing to our population a sufficient amount of nutritionally adequate food at reasonable cost to the consumer and in such manner as to make it profitable to all involved. Therefore, while a higher proportion of our research will be basic in character, we will continue to do whatever developmental research is necessary in order to make applicable the findings of basic research.

The steady increase in the involvement of the College of Agriculture in foreign advisory and training activities continues. The staff is called upon to advise foreign governments and institutions in the improvement of agricultural production and education and in home economics training. Students and trainees from the newly emerging and less well-developed nations arrive here in increasing numbers. The United States is the undisputed world leader in agriculture, agricultural science, and home economics. It is natural, therefore, that the less well-developed nations, which invariably have agrarian economies, should look to this country for leadership and assistance. This is one of the great challenges facing United States agricultural colleges today. Studies are underway of means by which the College of Agriculture can more effectively meet the needs of agriculture and home economics students and faculty members from other countries. Attention is also being given to courses of study for United States students who may pursue Agricultural careers in other parts of the world. In these studies every effort is being made to draw on the educational resources of the whole University, since it is recognized that neither the foreign students nor our own can be effective in their technologic specialty without an adequate background in the liberal arts.

On March 9-10, 1962, a dean's faculty conference was convened at Robert Allerton Park with three general objectives: (1) 'To provide an opportunity for the dean to present to and discuss with the faculty the problems and the opportunities facing the college; (2) to provide a means for the faculty to present ideas directly and freely to the dean on matters relating to the welfare of the college; and (3) to encourage faculty of all academic ranks to participate more actively in college affairs and in the collective formulation of college policy. Fifty-five persons selected from various areas of the college and from all academic ranks participated actively in the discussions and, at the conclusion of the conference, declared their enthusiasm for an annual event of this nature. This conference is but a single example of the ferment of self-examination and change that pervades to varying degrees all of the departments and each of the major functions of the college. There is a general awareness that we are in a dynamic age in which needs and opportunities for service are changing rapidly and that agriculture in its modern connotation is intimately interwoven into nearly every segment of our complex world society.

In research, teaching, and public service, the narrow, parochial identification of agriculture and its needs with the farm and the farm family is being replaced by a more complex image of agriculture as a vital facet of a highly dynamic social and economic world. Historic barriers between agriculture and the so-called fundamental fields of learning are being destroyed, and the type of instruction given, the kind of research undertaken, and the type of public service rendered by the College of Agriculture and its staff merge indistinguishably with those of other units of a great university.

LOUIS B. HOWARD
Dean

COLLEGE OF ENGINEERING

Long-range plans have been the subject of intensive study in the period 1959-62 and have led to a report by the Committee on Long-Range Plans. On May 29, 1962, the report was adopted by the college faculty as representing in principle the policies by which the college should be guided in the period ahead. An abbreviated presentation of the thirty-page report will be given here. It contains the summary of recommendations and excerpts from the ten sections of the report which illustrate the procedure and thinking of the committee in arriving at its recommendations.²⁴

Summary of Principal Recommendations

Engineering curricula must meet the requirements not only of present but also of future engineering practice. However trite such statements have become, they are the real challenge of engineering education. This report attempts to define the major problems in meeting this challenge and to make recommendations for the future development of the College of Engineering of the University of Illinois. This summary of principal recommendations is arranged according to the divisions of the report.

Organization of the College. The continuing need for engineers well trained in the basic technology of traditional fields, the maintenance of strong relationships with professional engineering societies, the limitations of alternative over-all plans of organization suitable for a large state university, and the difficulties inherent in a rapid transition to a new structure, lead to the recommendation that the present department structure of the college be retained but experiments with new structures should be initiated.

Development of New Programs and Facilities. Provision should be made for the development of new groups and experimental programs, particularly those of an interdepartmental nature.

Future Student Body. In the face of expected heavy enrollments and limited numbers of qualified teachers, strong consideration should be given to higher standards for admission to the Engineering College. An examination board should be appointed to establish qualifying examinations for entrance into the junior year. To realize full potential from the best students, honors programs should be enlarged and strengthened.

Faculty Development. The college should establish an organized plan for faculty development in teaching, research, and other professional activities. Each department should establish procedures for training new teachers and improving teaching at all levels. As far as possible, each faculty member should participate in undergraduate teaching.

Individual staff research should be encouraged by obtaining more funds for such research and for increasing the number of open Experiment Station assistantships.

²⁴ The full text of the report has been printed and is available under the title, *Report of the Committee on Long-Range Plans*, College of Engineering, University of Illinois, February 15, 1962.

Sabbatical leaves should be encouraged and present policy should be modified to allow work on advanced degrees during a sabbatical leave.

Distinguished authorities should be brought to the campus on temporary appointments and increased emphasis should be placed on holding scientific meetings on campus. Travel to off-campus meetings by faculty should be aided as much as possible.

Graduate Study and Research. The graduate study and research programs should continue to expand. In certain areas of engineering, programs should be developed that emphasize broad knowledge of public policy and social problems combined with a high level of technical competence.

Undergraduate Curricula. Engineering curricula should place strong emphasis on the sciences while not neglecting design. The first year of all engineering curricula should be identical and the second year compatible, in recognition of the essential unity of all engineering fields.

High-speed digital computers have become indispensable to engineering. A course in computers should be taken by all engineering students during their sophomore or junior year. Steps should be taken to encourage faculty training in computers so that computer techniques can be fully incorporated in advanced courses.

Engineering Technicians. The value to the engineer of well-trained technicians makes it important for the college to maintain close liaison with the technician training program in Illinois, to cooperate with the College of Education in developing teacher training in this area, and to support the establishment of technical institutes in Illinois.

Applied Mathematics. The College of Engineering should encourage and assist the Department of Mathematics in all appropriate ways in the development of a strong group in applied mathematics. To this end, the college should request the Department of Mathematics to establish a Division of Applied Mathematics. Studies should be made of the feasibility of joint appointments between the college and this division.

Social Sciences and Humanities. The humanities and social sciences must be recognized as essential for a truly professional career in engineering. Therefore, the college should take all appropriate steps to insure that engineering students receive a meaningful education in both the social sciences and humanities.

Specifically, a standing committee should be established in the college which, in consultation with representatives of other areas, shall select courses and course sequences to insure valuable experiences for engineering students in both the humanities and the social sciences. All undergraduate curricula should include a minimum of 18 credit hours in the social sciences and humanities, involving work in both areas.

From Section 1: INTRODUCTION

Engineering educators generally accept the principle that curricula cannot be based on contemporary practice. Changes in technology during an engineer's professional career are so great that such an education would be completely inadequate. However, the changing requirements and the rapid advancement of science present the educator with an ever-widening spectrum of problems. This report will attempt to define the major problems and to make recommendations for the future development of the College of Engineering at the University of Illinois better to meet the needs of the future.

The Committee on Long-Range Plans was appointed by Dean W. L. Everitt

in September, 1959, with Professor N. M. Newmark as chairman. It held periodic meetings and discussions during the year and had the benefit of advice from faculty members who met with it by invitation to review certain aspects of the organization of the college and to present future plans of the various areas and departments. A preliminary draft of the report of the committee, dated December 8, 1960, was distributed to the faculty and discussed at a meeting at Allerton House on January 13 and 14, 1961, with a representative group of some 50 staff members of the college. A second draft was distributed to the faculty in November, 1961, and discussed with a group of 80 faculty members at a meeting at Allerton on December 15 and December 16, 1961. This report is the outgrowth of the discussion at these meetings, reports and comments by working groups at the meetings and further discussions among the committee.

From Section 2: ORGANIZATION OF THE COLLEGE

New developments in engineering and science require continuous revision of subject matter in educational programs. The increased emphasis on science and mathematics in professional curricula results in a growing similarity in the major objectives of these curricula. Emphasis on the education of engineering students in the social sciences and humanities, together with an increased competence in science, reduces the time available in undergraduate curricula for courses which are highly specialized along professional lines. The trend at some schools is toward offering one baccalaureate degree in engineering with provisions for majors having different professional orientation. Furthermore, the changing emphasis in engineering education directs attention to the question whether the professionally oriented departmental structure is the most effective organization.

The College of Engineering at the University of Illinois is the principal source of practicing engineers in a state with a demand for engineers in agriculture, construction, communication, conservation and utilization of natural resources and products, light and heavy manufacturing in great variety, public utilities, and other areas. However, the college must for the near future not only continue to graduate many engineers in the traditional fields, basically prepared for the present wide range of engineering practice; it must also move into new areas of education and research and toward new groupings among faculty from the traditional departments in order best to prepare research and practicing engineers to work in the areas which will become increasingly important over the next ten years.

Factors which favor retaining the present departmental structure at Illinois include the continuing need for engineers well trained in the basic technology of the traditional fields; the maintenance of good relationships with the professional engineering societies, which contributes to faculty and student morale; the limitations of alternative over-all plans of organization considered by the committee; and the difficulties inherent in a rapid transition to a new departmental structure. For these reasons, the committee recommends the retention of the present departmental structure, at least for the near future. However, experimentation with other types of departmental or group structures is recommended, particularly those related to desirable interdepartmental or interdisciplinary programs of education and research. The college is large enough to permit experimentation without interruption of existing programs.

From Section 3: DEVELOPMENT OF NEW PROGRAMS AND FACILITIES

Although the committee believes that the department will continue to be the basic unit in the organization of the College of Engineering for the immediate

future, it has envisioned the increasing prominence of functional areas which cut across traditional departmental and even college boundaries.

Interdepartmental or interdisciplinary groups may be formed on various bases. Four possible types of foci of such programs, not all mutually exclusive, are the following:

1. An area in a basic field of knowledge, with a fundamental theoretical structure of its own, which has wide application in a number of engineering fields. Examples are:

Transfer and transformation of energy
Information processing
Fluid mechanics

2. A defined new field of technology, as for example,
Nuclear engineering

3. A project-oriented research program which requires a high level of talent from theoretical and experimental engineers and scientists from two or more departments or disciplines. Systems engineering might frequently develop problems in this category. A good example is the research on electromagnets, making use of superconductors, now being initiated in the Coordinated Science Laboratory. It has problems to challenge the mechanical, electrical, and structural engineer as well as the physicist.

4. The research laboratory or facility with a broad but bounded interdepartmental or interdisciplinary area of interest. Examples are:

Digital computers	Environmental engineering
Materials science	Aerospace engineering
Materials engineering	Bio-engineering

Interdepartmental programs on one of the bases described above, particularly in a basic field of knowledge, or a newly defined field of technology, may eventually lead to a new department that might involve realignment of present departments. The intermediate steps would include the organization of research seminars; the offering of basic courses, perhaps cross-listed in two departments or more, coordinated with or replacing existing courses; the establishment of new graduate degrees on the basis of a core of related courses and thesis research and of a major for a bachelor's degree. One can thus imagine a focus of activity developing first on the faculty and graduate level and finally into a full-fledged education and research program or department, as a field develops from novel application of basic science to engineering practice.

The initiation of new ventures of the kinds described should be encouraged. At the same time present programs of education and research of high quality and usefulness must be kept going. Certain ground rules should be met by new departures before scarce space and financial resources are allocated to them:

1. A group of interested faculty members with a common or overlapping active research interest and with demonstrated research ability must be available. Strong leadership by one individual is often desirable.

2. In the formative stages association and active cooperation with one department is desirable to provide service facilities (secretarial, shops, supplies, etc.) and administrative liaison.

3. Unless or until a new curriculum or formal teaching program is developed, the faculty involved should teach and engage in supporting activities in an established department. Walled-off research institutes should not be allowed to

develop. New developments should be brought into the departmental teaching programs as rapidly as practicable.

From Section 4: FUTURE STUDENT BODY

A long-term trend of greatly increased enrollment in engineering at the University of Illinois seems likely despite minor fluctuations. Estimates made by Dean W. L. Everitt in "Public Higher Education in Illinois"²⁵ indicated a growth in the undergraduate enrollment exclusive of physics, in the years between 1960 and 1975 from 4,300 to 6,000 students and in graduate enrollment from 815 to 2,600, assuming that the University of Illinois at Congress Circle, Chicago, develops a four-year engineering program by 1965. The projected enrollment estimate shows clearly the need to expand engineering educational facilities at Urbana. Furthermore, it must be emphasized that future engineering college output for the nation may well be limited by the availability of qualified teachers rather than by a lack of qualified students.

The emphasis on graduate work is consistent with the recommendations of the University Study Committee on Future Programs, which has suggested that the University enrollment be guided toward a 2-3-2 ratio between the lower undergraduate (i.e., freshman, sophomore), upper undergraduate (junior and senior) and graduate levels. A growth rate of the order of 15 per cent per year in graduate enrollment has been in evidence for the past several years at Urbana. The committee believes that this trend is desirable and should be encouraged. To this end there should be a careful selection of the limited number of students admitted at the freshman level.

Entrance requirements and qualifying examinations for upper-level undergraduate students and for graduate students may be needed to control the pattern of enrollment and to avoid overloading inadequate facilities with poorly prepared students. The committee recommends that qualifying examinations be established, to be given to all undergraduate engineering students before they enter the work of the junior year.

To establish the proper type of qualifying examination, and to determine the difference, if any, in the evaluation of the work of those students who have completed their first two years on the Urbana campus compared with those transferring from other schools, the committee recommends the establishment of an examination board to develop the type of examination and to administer the examinations after the studies of the type and required level of achievement have been completed. The committee recommends further that these examinations be started soon, but be used for diagnostic purposes only for a period of three years until sufficient experience with results has been acquired.

From Section 5: FACULTY DEVELOPMENT

The strength of a university lies primarily in its faculty. Therefore, careful consideration must be given to providing adequate salaries, facilities, the appropriate research atmosphere, and other means of support to attract and hold an outstanding staff and simultaneously encourage continued and improved staff productivity. Our staff must have the ability to foresee the future scientific and technological advances and must lead in making new discoveries as well as in the education of students as modern engineers and scientists.

²⁵ *Staff Report to the Committee to Recommend the State Plan for Public Higher Education*, published by the Illinois Joint Council on Higher Education, Springfield, 1961; pages 69-77.

Faculty development can include teaching, research, writing, service in national organizations, training of technicians, career guidance, dissemination of scientific information through local colloquia, and other meetings and general leadership in developing new scientific approaches. Specialization in a single activity is not in the best interest of a progressive academic atmosphere.

Increased budgetary allotments for additional staff are important if the staff is to have adequate time for research. In general, teaching loads should be made flexible so each staff member can have time available for other professional activities. Research is of utmost importance for staff members guiding the work of graduate students.

Although members of the staff of the College of Engineering have been able to devote a substantial amount of time to research or comparable creative work, much of the support for this research has come from contract funds. This is not an unhealthy situation. Nevertheless, the funds available in the recurring budget must be sufficient to permit the development of new research areas, even when contract sponsorship is not available. Moreover, additional funds are needed for research assistantships to enable the staff members to make better use of their time and to permit more graduate students to have research experience as part of their graduate education.

It is recommended that, as far as possible, each staff member participate in undergraduate instruction. This can be accomplished by establishing a rotation plan for course instruction.

Those staff members who do not demonstrate capability in their technical field, or who do not have the vigor and creative imagination associated with achievements in science and engineering, should be discouraged from continuing their careers at the University. A full-time staff member who does not give evidence of the qualifications required for a tenure position should not be encouraged to remain on the staff longer than five years as an assistant professor. However, the committee does not favor an automatic "up-or-out" policy for promotions.

Teaching

The importance of good teaching should be emphasized. Because of the continuous evolution that is a vital part of engineering teaching, good teaching involves much more than merely presenting a well-organized, clear lecture. The teacher must be aware of new developments in his field and must have the ability and desire to keep course content continuously up-to-date. This is the reason for the necessity of a balance between teaching and other activities. Strong encouragement should be given to research and organized studies to improve the effectiveness of teaching on all levels from freshman courses up through graduate courses.

The College of Engineering should be genuinely concerned with faculty development and improvement of teaching at the junior colleges throughout the state, since these teachers will be supplying the basic training for many of the students coming to the University of Illinois.

From Section 6: GRADUATE STUDY AND RESEARCH

The University of Illinois has a long history of strong graduate programs in engineering. It is second in the nation in the number of Ph.D. degrees granted in engineering from 1953 to date, and has been first in the country from 1947 to date in the number of Ph.D. degrees in Civil Engineering. One out of every five engineering students at the University of Illinois, Urbana, is in a graduate

program. Concurrently, engineering research at Urbana has grown to nine million dollars per year, with only a small portion coming from the recurring budget. A strong research program is essential to the support of graduate students in engineering and the physical sciences.

Because of the urgent need for more engineering teachers with advanced training, and because of the necessity for more advanced training on the part of those engineers who can be classed as creators or designers, the University of Illinois should continue to expand and extend its program in graduate study and research.

In certain areas of engineering, the committee believes it desirable to develop programs which emphasize a broad knowledge of public policy and social problems combined with high level technical education. Such areas include transportation, urban planning, water resources, management, and the like, where qualitative rather than quantitative solutions are involved. These problems must be approached in an interdisciplinary fashion involving economic, sociological, political, and other human factors.

From Section 7: UNDERGRADUATE CURRICULA—TECHNICAL CONTENT

To prepare engineers for successful careers, the curriculum must place a strong emphasis on the sciences. The basic sciences (mathematics, physics, and chemistry) are essential, but a wide coverage of all of the engineering sciences (electrical theory, nature of properties of materials, mechanics of solids, mechanics of fluids, and thermodynamics) are equally necessary.

The emphasis on science should not imply that "design" is not important. The application of scientific principles toward the benefit of society is one of the identifying characteristics of an engineer. The real challenge for engineering educators is to develop design and synthesis courses that supplement and enrich the material that has been presented in earlier courses in the basic and engineering sciences.

To make room in a four-year program for the important new material, the college must decrease the number of hours devoted to such other topics as the routine skills intimately associated with the practice of professional engineering (i.e., surveying, drafting, machine tool operation, etc.).

Use of Computers

The high-speed digital computer has become an indispensable part of engineering, and means should be developed for integrating the computer into the educational and research program throughout engineering. Therefore, a course on high-speed digital computers should be taken by all engineering students during their sophomore or junior years. Because the benefits of early courses on computers will be greatly influenced by the effectiveness with which the applications are included in subsequent courses, adequate facilities must be made available so that computer work can be integrated into the courses of the junior and senior years.

Design and Laboratory Courses

A danger exists in the trend toward a more scientific basis for engineering that both students and faculty will become excessively preoccupied with mathematical analysis or with the exposition of important fundamental topics for their own sake. In many respects engineering is a creative art. The curriculum must convey to the student the vital facts that engineers design things and that these designs must of necessity involve judgments and compromises.

The teaching of concepts of design and experience in the laboratory can develop the engineering outlook and emphasize the art of solving problems creatively. The committee recommends that consideration be given in all departments to a revision of the laboratory program to stress fundamental concepts and ideas rather than conventional equipment and machines. Stereotyped experiments should be avoided and should give way to more imaginative approaches in which students are given an opportunity to undertake pertinent projects of their own choice and to benefit from a kind of internship by participating in real and difficult problems.

From Section 8: ENGINEERING TECHNICIANS

The revolutionary discoveries in science and technology have decreased the manpower needs for the semiskilled and greatly increased the needs in the technical categories. The demand for adequately trained technicians as aides to the professional engineer is expected to triple in the next 15 years.

Recognizing this need, the Office of the Superintendent of Public Instruction initiated, in September, 1958, a study of vocational and technical education in Illinois. Recommendations of the study, particularly germane to this report, call for the establishment of a system of comprehensive junior colleges, ten in all, strategically located with reference to population distribution, means of transportation, and geographic and sociological factors.

The several centers would provide technical and college transfer curricula (the majority requiring two years of full-time study) as well as an opportunity for adult education in the region.

The College of Engineering is cognizant of the need for technicians and appreciative of their value to the engineering profession. Further, it is recognized that the technician training program may be the most satisfying educational experience for many young people. However, in view of the regional nature of the several centers and their affiliation with the Office of Public Instruction, the committee believes that it is neither desirable nor expedient for the College of Engineering to engage directly in technician-training programs. Rather, the scope of the technician's activities indicates the need for close liaison with the College of Engineering.

With regard to the training of technicians, the committee makes the following recommendations:

1. While there should be no direct administrative relationship between the several centers and the College of Engineering, a strong and formal advisory relationship is desirable to provide for effective liaison.

2. That the existing Technical Institute Curriculum Advisory Committee have its responsibilities defined in such a manner as to provide a loose and flexible organization to deal with future problems such as teacher training, curriculum supervision and any other problems that may become important to the College of Engineering. It is recommended that the College of Engineering cooperate actively with the College of Education in the development of the program for the training and upgrading of technical institute staff.

3. That the College of Engineering express its approval of the establishment of a series of technical institutes throughout Illinois. These should be organized to grant an associate degree upon the completion of a two-year curriculum. The curricula should be structured so as to satisfy E.C.P.D. accreditation criteria.

From Section 9: APPLIED MATHEMATICS

An effective University program in mathematics is of critical concern to the

College of Engineering. The most effective teaching and the highest quality of research in mathematics must be sought by the college. There has been a persistent belief within the college that the present teaching of mathematics to undergraduate engineers leaves much to be desired and that a stronger program of graduate training and research in applied mathematics should be encouraged.

This committee does not feel that a division of mathematics into pure and applied disciplines is sufficiently realistic with respect to either teaching or research to serve as a satisfactory basis for separate departments. There are very real benefits in having mathematics taught to engineering students in a department where mathematics is cultivated for its own sake. There is a very real danger that a Department of Applied Mathematics created explicitly to serve the needs of the College of Engineering would never rise above mediocrity.

The nature of applied mathematics is such that its teaching and practice are widely diffused throughout the University. Cooperative effort by the mathematicians, engineers, and physicists appears to be the natural solution to the problem of strengthening applied mathematics on the campus.

The committee recommends that the College of Engineering request the Department of Mathematics to establish a Division of Applied Mathematics. This division would serve as a center for cooperative activities and should enhance the prestige of applied mathematicians on campus. It should help to attract additional distinguished applied mathematicians and funds for their support. This committee suggests that the assistance and advice of the Graduate College Committee on Applied Mathematics be enlisted in the development of the applied mathematics program.

From Section 10: SOCIAL SCIENCES AND HUMANITIES

The humanities and social sciences must be recognized as essential for the foundation of a genuinely professional career in engineering. The products of the engineering profession have great human and social consequences and science and technology must assume an increasingly responsible role in the leadership of business and government.

The effective engineer interacts with society whether he knows it or not. If his accomplishments have no effect on society, his career is limited indeed. A major responsibility of engineering education is to see that the engineer's social role is conscious and intelligent. With cataclysmic forces at his command, the engineer who knows little of our society, our culture, our history, may be trained, but he is not educated.

The engineering college at the University of Illinois has demonstrated leadership in many areas of engineering education, but it is lagging behind in its program of required study in the social sciences and humanities in the undergraduate curricula. A thorough study, directed toward major strengthening of this program, is overdue. To initiate this study, the following recommendations are made:

1. Establish a standing committee in the College of Engineering which, in consultation with representatives from other areas, will seek to accomplish the selection of courses and course sequences which can provide—within the time available—challenging intellectual experiences in important areas of both the social sciences and the humanities.

2. Establish a minimum requirement of 18 credit hours in the social sciences and humanities, involving work in both areas, exclusive of rhetoric, for all undergraduate curricula offered in the college.

Note: During the year 1961-62, a subcommittee of the College Policy and Development Committee carried out the kind of study recommended in 1. Through the parent committee a requirement similar to that stated in recommendation 2 was presented to and approved by the college faculty on May 29, 1962, at the same meeting at which the Long-Range Plans report itself was approved.

W. L. EVERITT

Dean

COLLEGE OF LIBERAL ARTS AND SCIENCES

The College of Liberal Arts and Sciences must expect to absorb a considerable share of increased enrollments in the next decade. Since 1957 it has been actively engaged in formulating plans for the future in order to meet more effectively the demands that may be made upon its facilities, its staff, and its instructional programs. However, planning has been conceived as a function of operational units, not as a separate or independent function to be performed by a committee whose only charge is to generate long-range plans for the college. The diversity and variety of interests within the college dictate that planning must be carried on simultaneously by many different groups. Committees of the college are asked to make recommendations in the light of potential developments and the departments to make decisions with respect to future needs. Traditionally the committee on courses and curricula has exercised a police function with respect to course and curricular proposals; now it is asked to assume a more positive role in planning and educational policy. Divisions of the college are more actively developing programs. The Division of Social Sciences, for example, has made recommendations with respect to the new area studies. When vacancies occur in individual departments, departments are asked to fill these positions with a due regard for developments and anticipated needs within the subject matter represented by that department.

A number of administrative arrangements have been made to provide more adequate machinery for growing programs and for new disciplines and to make possible better coordination among departments working in closely related areas. A School of Life Sciences and departments of Russian and anthropology have been established. A graduate degree program in linguistics has been authorized to provide professional training in what promises to be one of the most fruitful approaches to language study.

In 1959 the college building committee, serving in an advisory capacity to the dean, the executive committee and the department heads, prepared recommendations concerning the building requirements of the college over the next ten years. The committee produced a comprehensive report distinguished by an effort to correlate educational programs with physical facilities. Every effort has been made to avoid recommendations divorced from the instructional and research considerations of the departments.

With respect to staff, the college sees a potential danger in increased enrollments and a shortage of teachers that may result in a steady deterioration in the quality of the staff. There will always be the tempta-

tion to retain adequate persons rather than face the rigorous competition of the academic market place. One way of avoiding the difficulty is through intensive review of all nontenure faculty members by the departments. To bring this about, the college has adopted the following policies with respect to all appointments in the nontenure ranks of instructor and assistant professor:

Tenure. Under the statutes of the University a faculty member does not have legal tenure until he is promoted to an associate professorship, but the executive committee feels that each department should make known to each staff member at the earliest possible date whether his work is of a character that an eventual recommendation for promotion to a tenure post is contemplated. To that purpose, the following procedure will apply beginning with the academic year 1962–1963. No later than the end of the first semester of the year *prior* to a staff member's eligibility to apply for his first sabbatical leave, his department should prepare a written evaluation of his performance and indicate the department's tentative recommendations with respect to future promotions. A copy of that report should be given to the faculty member and filed with the dean.

Time-in-Rank. Time-in-rank of the faculty member is not a factor in recommending promotion since the concern is with the record of achievement since the last promotion. However, if after three years' full-time service as an instructor, a faculty member has failed to show sufficient evidence that he is entitled to a promotion, no reappointment as an instructor for more than one year will be permitted without special approval. Similarly, if after six years' full-time service as an assistant professor, the faculty member has failed to show sufficient evidence that he is entitled to a promotion, no reappointment beyond one year will be permitted without special approval. These limitations on time-in-rank do not apply to faculty members first appointed prior to September, 1955.

If enrollments increase as they are expected to do, there is the danger that more and more energies and resources of the college will be devoted to instruction of an expanding group of students either incapable of pursuing a course of college studies or improperly prepared to do so. Thus an ever increasing amount of teaching will be utilized on those less able to profit from this teaching—or instruction will involve work that the high schools should have done. With these considerations in mind, new admission requirements have been adopted that will insure better prepared students in academic subjects and that will, it is hoped, lead to less remedial instruction.

In the course of the 1961–62 year, the College of Liberal Arts and Sciences has put into effect or carried forward several plans projected earlier. In general these concern improvement of quality in teaching, in student body and in curricular offerings.

Freshman and Sophomore Instruction. The college has introduced a program designed to improve instruction at the freshman and sophomore levels. This involves supervision by regular staff members of classes taught by assistants. Regular staff with such assignments are relieved of some of their teaching duties.

Merit Raises for Assistants. Members of the teaching staff with the rank of assistant will benefit from a new salary scale that will take into account the extent of their experience, the quality of their teaching and the progress they have made toward the doctorate. This is expected to prove an incentive to better teaching for a group of staff members who are, very often, so preoccupied with their thesis research that they sometimes slight their teaching duties.

Non-Western Areas. A conference on non-Western culture explored the possibility of including non-Western materials in existing courses or of introducing new courses in this area. The Division of Social Sciences has since introduced two such courses which survey the multiple facets of the non-Western world. Interdisciplinary in approach, the courses are taught by a staff of specialists representing the various social sciences. The college also plans to offer some non-Western languages as soon as staff needs are met.

Linguistics. The degree program in linguistics has received NDEA support and has a good group of students. Its curriculum, cutting across many departmental lines, has been approved. Senior staff members have been brought to the University to participate in the program which previously had the support of many different departments. Initial steps are now being taken toward the formation of a Department of Linguistics.

School of Life Sciences. Three new courses sponsored by the school have been approved by the faculty to provide a new undergraduate program in biology designed for superior students and a broad foundation suitable for a major or for subsequent specialization in various areas. The program coordinates the offerings of several departments and eliminates duplication heretofore unavoidable.

Honors Program. The college is determined not to lose sight of the needs of the superior student. The Honors Council continues to explore ways of expanding and improving the existing program. It has considered the possibility of establishing an honors college within the College of Liberal Arts and Sciences. While this seems premature at the present time, the council has proposed a plan for centralizing the work with honors students in the office of the dean, thus, in a measure, implementing in advance some administrative features of an honors college. It has extended certain privileges to a group of superior students who are marginal to the James Scholars.

JACK W. PELTASON
Dean

COLLEGE OF LAW

Education or training for the legal profession in England was and is the province of the bar and of the solicitors. The call to the bar there still is conditioned upon the candidate's completing the required number of dinners at one of the Inns of Court and passing the examination given by the bar. Legal education in the universities is a part of the general undergraduate program at Oxford and Cambridge, and the emphasis is placed upon a broad foundation in the law, rather than upon the technical skills required in the practice.

In the American Colonies legal education was not formalized in an institution modeled after the Inns but the preparation for admission to the practice of law nevertheless rested in the hands of the practitioners. The aspirant for a professional career "read" law in a lawyer's office and then was examined on his knowledge in open court by a judge. So long as the leaders of the profession were men who had acquired a broad general education in the classics, the apprentices became educated individuals.

In the latter part of the eighteenth century, there were a few attempts to create law schools in which an organized course of study was offered. Beginning about 1840, the law school in the university had its formation. Though progress was very slow, legal education in the universities grew steadily. Nevertheless, until after 1900, the principal road to the bar was still study in a lawyer's office. As the twentieth century began, more law schools were created and an association of those which wished to establish standards of achievement was formed. It was not until 1921 that the American Bar Association formally promulgated minimum requirements for legal education and for admission to the bar. The acceptance by the states, even of a relatively low standard, came very slowly.

In many of the law schools legal education was mass education and very inexpensive. At the close of World War I, new schools arose all over the country and there was a flood of law students. Many of the institutions produced large profits for their founders and managers. Enrollments rose dramatically and admissions to the bar exceeded the demand for lawyers. This gave rise to the cry that the bar was overcrowded, a belief which continues to this day. In Illinois the proprietary law schools were closed by 1935, and steady progress was being made by all of the law schools in the state in being placed on the American Bar Association's list of approved schools. At the present time there are no unapproved law schools in Illinois.

As the schools increased their requirements for admission, there was

a steady decline in law enrollments. The following table shows the total number of students in the Illinois law schools for the dates indicated and the admissions to the bar in the same years:

TABLE 6. NUMBER OF LAW STUDENTS AND ADMISSIONS TO THE BAR IN ILLINOIS

Year	Number of Students in Illinois Law Schools	Number Admitted to Bar in Illinois
1920	1931	445
1925	3163	503
1930	3019	700
1935	3081	703
1941	1838	555
1943	539 ¹	191
1948	3606 ²	707
1950	2814	777
1955	2274	532
1959	2547	not available

¹ This was the low fall enrollment of the war period. The total difference between normal law school enrollments and the actual enrollments in the war period exceeded 3,000.

² This is the peak of the postwar period. Because most students of law are men and since they are older than other students when first admitted to courses of their major interest, a much larger proportion entered military service during the war. Consequently, the postwar increase was substantially above that of other divisions of the universities.

These figures indicate that although the population of Illinois has increased greatly since 1925 and the amount of legal business has expanded, the number of students in the law schools has declined sharply. In the same period, admissions to the bar of persons who have "read law" in a lawyer's office, a method still recognized in our state, have been reduced to about zero. In the last four years only three persons have qualified for admission in this way.

Beginning about 1956, opportunities for law graduates in the profession began to outnumber the persons available for employment. In the year 1959 the principal law schools had at least five times as many requests for graduates as there were graduates.

One other index of the number of law graduates is interesting. The percentage of the total number of students in the University of Illinois who enrolled in law study varied as shown in Table 7.

In the early years of this century, medicine, ministry, and law were the principal professional disciplines. Today many additional professional avenues are open to the college student. It is not likely that the present percentage of law students will rise sharply unless the demand causes a substantial increase in the financial return which the law graduate may expect.

TABLE 7. PERCENTAGE OF TOTAL ENROLLMENT IN UNIVERSITY OF ILLINOIS REPRESENTED BY ENROLLMENT IN COLLEGE OF LAW

Years	Percentage
1905-1910	5.3 to 5.9
1911-1915	2.4 to 4.1
1916-1920	0.4 to 2.6 (World War I)
1921-1925	1.5 to 2.6
1926-1940	2.1 to 3.1
1941-1946	0.3 to 1.1 (World War II)
1947-1948	2.1 to 2.47
1949-1959	1.3 to 2.0

From 1925 to the present, the proportion of students studying in the evening divisions of Illinois law schools has declined and the percentage of students in university-connected schools has risen.

The Future of Enrollments

It is impossible to predict with any assurance what the future will be. Assuming that the percentage of university students who attend law schools remains about the same as at the present time, enrollments will begin to rise rapidly in about 1965, and by 1969 the present numbers will have been increased by at least 50 per cent.

The University of Illinois at Urbana is the only public-supported institution in the state offering law training. The excellent facilities occupied for the first time in 1955 will be able to accommodate the University's share of the increased numbers. It is my judgment that no new law schools will be required in 1975 because the existing institutions will be able to meet the needs. There is some hope that as the numbers increase, some of the schools will be able to raise admission and scholarship standards so that the end product of all will be improved.

Changes in Legal Education

Every year the mass of legal materials with which the lawyer must be familiar mounts. Judicial decisions, administrative rulings, and legislation are turned out at an ever accelerating pace. Yet there seems to be agreement that the period of formal training for the profession cannot be lengthened. This has a tremendous impact on the programs of the law schools:

1. Although this has been true for at least 25 years, it becomes obvious that the schools cannot teach any substantial part of this mountain of detail. Furthermore, law is constantly changing to meet society's needs; much of the detail learned today will be replaced by new acts

or decisions before the student enters the practice. Legal education must find some common denominator so that the graduate is prepared to anticipate and evaluate change. The trend in the principal law schools for the next period undoubtedly is toward a broad base of legal reason and legal theory and a lessening of the time devoted to "rules of law." This finds its expression in added courses in Law and Society, Jurisprudence, Comparative Law, Legal History, and the like. There must be a constantly increasing emphasis on the foundations of the law rather than on the specific solution for a particular time.

2. In 1900 the lawyer prepared to practice in a local community and his days were filled with local problems. By 1940 the alert attorney was concerned with state-wide problems and with representing clients in activities that went beyond the boundaries of the state. The concern with federal regulations of all kinds and especially with federal taxation required the attorney to widen his horizon. It now becomes apparent that the next generation of lawyers will have to operate on the world scene.

The final consensus of the 1959 Conference on Legal Education, "The Law Schools Look Ahead," held at Ann Arbor, Michigan, described this change in the lawyer's function:

Even today many lawyers are becoming involved in law practice touching problems international or foreign. We see also the increasing obligation on the part of the members of the bar to be both knowledgeable and thoughtful in international and foreign matters in assisting the executive and legislative branches of government to create the legal structures essential for peace in this ever-shrinking world and in acting on domestic matters with an appreciation of changing world conditions. We see also an increasing obligation on the part of the legal profession to act as intelligent interpreters of the world scene and to help formulate public opinion with a breadth of insight extending beyond the borders of this country.

The implications for legal education of this shift in the scope of the practice are apparent. The law schools will be required to teach courses in international law and international organization. In addition, they will have to prepare students for participation in all phases of international commercial transactions. But the impact will not be felt solely in the law schools. It will impose on the student in his prelegal years the necessity to broaden the base of his education in languages, in history, in philosophy, and in political theory and practice. It will be more important for the lawyer to have a deeper understanding of economic theory than of the details of business practices. It is probable that any increased length in the period of formal training will be in the college years, and it is probable that all of the law schools will become graduate schools within the next ten years.

3. If the mass of detail will not be taught, then the student will need to be introduced to the techniques of problem solving. He must be freed

from the course which presents narrow doctrinal solutions and given an opportunity to attempt to resolve questions which cut across traditional course lines. In this development, a very large increase in staff will be required. The law schools have too long been content with large classes and have failed to provide instruction on an individualized basis. Our present inability to "cover" the subject matter of the law is presently forcing a change in our instructional methods.

4. Increased attention will be devoted to the public as well as the private professional responsibility of the lawyer of the future. Many believe that the bar of today has failed and is failing to furnish leadership in areas in which its members have their greatest competence.

5. If the schools are to develop as indicated above, there will be an even greater emphasis on the quality of the student who is admitted and the quality of the work done in the schools. The demands are heavy and all indications are that the burdens will become heavier.

In conclusion, one can predict that the number of law students will increase by at least 50 per cent by 1975. These numbers can be accommodated in the existing schools. The tasks for which the law schools will be training in the next fifteen years will be so much more difficult that better students with broader and deeper intellectual experience in college will be needed to meet the demand. The law schools will need to place more and more time and effort on individual instruction. Larger and better equipped faculties will be necessary. Finally, all of this means that legal education will become increasingly expensive.

RUSSELL N. SULLIVAN
Dean

COLLEGE OF EDUCATION

Functions of the College

A principal objective of the current self-study of the College of Education is to ascertain what modification in policy, program, and practice will be required to meet more effectively the challenge of the new era. There is a tendency in many schools or colleges of education to attempt to be all things to all people. It seems obvious that we shall not be able in this college effectively to staff, provide the compensation necessary for high scholarship, and to secure administrative implementation of our effort unless we define the functions of the college, limit our program to those areas in which we are or hope to be eminent, and place program development on a priority basis. The college should evaluate with care proposals for developing new programs. It is important that the college not be committed to an extensive program in a particular area because federal funds presently are available—unless the future financial and educational implications for the college and University are identified and thoroughly considered.

The College of Education has three principal functions: (1) the preparation of education personnel for positions of educational leadership, (2) the contribution to the scientific study and advancement of education, (3) the provision of such services as may be effective in the advancement of education. It should not be expected that every member of a faculty be expert in each of these areas. Some members of a college faculty may be more seriously interested in teaching than in research or service. Others may have a major concern with research. Still others will make their major contribution in service. This concept in no way should be interpreted as subordinating the importance of research, for one of the major needs in educational research is the identification of basic and untouched areas. It suggests that consideration be given to all of these elements as a career unfolds.

Basic Principles of Organization

While the principle of flexibility and function are basic in the planning of a building to house an organization, it is equally important that these principles extend to what goes on in the building. Certain basic concepts underlie the reorganization of the College of Education. These are:

1. Organization is merely the vehicle which is designed to facilitate the attainment of specific goals. Administration is a process of leading several forces within an organization toward the attainment of these goals.

2. A distinction, as clear-cut as possible, must be drawn between the

establishment of policy and the responsibility for the establishment of policy—and the execution of policy which is administration.

3. If we would advise the administrators and policy boards of local school systems how to get more out of the educational dollar, this point of view must prevail in the administration of the College of Education; funds, whether public or private, should be spent with wisdom and caution.

4. Effective leadership in an organization requires

(a) a clear-cut definition of the functions and responsibilities of each member of the organization;

(b) the effective and intelligent delegation of responsibility and authority;

(c) the willingness of the individual to whom responsibility and authority have been delegated to accept the assignment.

5. An organization must function in the interest of the general welfare. Contribution to the scientific study and advancement of education requires an educational statesmanship that must supplant any desire to protect, continue or to create vested interests. Close coordination and co-operation, therefore, are essential to effective administrative organization.

6. The gap between the several levels of education ultimately will close during the next ten or fifteen years. The proposed organization of the College of Education is based on this concept also. Teachers in the secondary schools not only need to know the content of the discipline or disciplines which will be taught, but also something about human growth and development, evaluation, research methodology and statistics. Every teacher should be able to interpret the research in the field. The basic goal of the college is the creation of statesmanlike leadership, devotion to the qualitative ideal and capacity to contribute to the scientific study and advancement of education.

Examples of Trends Affecting Programs and Practices

Faculty and administration of the College of Education have been reviewing past programs and considering future developments during the last two academic years. In this self-survey various trends which generally will affect the College of Education and the preparation of educational personnel have been identified. Examples of some of the assumptions which will affect the education of educational personnel are the following:

1. Within the next ten years, with the growth of junior colleges and other programs of higher education in this state, admission to the undergraduate teacher-education programs of the College of Education will be limited to senior college applicants.

2. Within this ten-year period, enrollment in the teacher-education program will be limited substantially and both the college and the Uni-

versity Council on Teacher Education will be devoting more extensive effort to the development of master teachers, subject matter specialists and service specialists, rather than attempting to supply the total market.

3. Some time during this ten-year period, there will be initiated five-year programs, both for elementary and secondary school teachers, which will consist of a broad, general four-year liberal education and one year devoted to professional education, including an internship or some approved field experience.

4. With the reduction of numbers, educational personnel from the College of Education and programs approved by the University Council on Teacher Education will permit a follow-up program in which the College of Education, in cooperation with local school systems, will provide expert supervision of new teachers for at least a two-year period.

5. The University High School generally is accepted as an experimental and research center. With the development of new laboratory facilities, the central responsibility in the College of Education will revolve around a program of education research as a major responsibility. This, also, will involve many cooperating public schools.

6. The certification of educational personnel gradually is being delegated to the training institutions. The institution must certify to the state that the individual has met all the requirements of the state. However, this certification procedure ultimately may result in an examination for admission to the profession somewhat on the basis of the bar examination or examination in the medical field. This plan may not be adopted universally by the states but this would not deny the College of Education of the University of Illinois the opportunity to develop such an examination plan, involving both written and oral examinations and interviews, as the basis for the University's endorsement of the candidate. This would be over and beyond state requirements.

Obstacles to Progress

In order to continue the national and international eminence which characterizes some programs in the College of Education and to identify other areas where we might aspire to this position, obstacles to the advancement of education might be identified. The generation of new ideas, the adjustment of institutions to meet the needs of a social system and the individuals therein, or the modification of policies to meet new conditions frequently requires the development of new techniques or new instruments to secure the required changes. The reverence for tradition, the satisfaction with the present, the reluctance to look beyond the horizon and perhaps the selfish protection of individual prerogatives, sometimes at the expense of an entire operation, impede progress. Men are able to discover defects in institutions and indicate remedies but reverence for

tradition and the force of habit offer much resistance to required change. I feel confident that we shall face this critical problem courageously and with wisdom and that we shall pioneer, as we presently are doing in certain areas, new frontiers.

ALONZO G. GRACE
Dean

COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION

Undergraduate Program

The Committee on Undergraduate Education within the college has worked for two years on a plan of bringing new strength to our entrance requirements and to rebuilding the general and basic undergraduate curriculum of the college. The revised entrance requirements have been submitted and they have been approved. They will be effective as of September, 1964. The committee in May, 1962, completed a two-year study of the undergraduate curriculum and proposed an extensive revision designed to strengthen the general curriculum of the college. The changes will become effective in September, 1964. They are designed to prepare students for modern business activity, for the complexities of political and economic citizenship in the modern world and for dealing with questions involving ethical and moral values. Without weakening the technical preparation of the student for the business world, the curriculum provides increased emphasis on the humanities, natural science, and social science. There will be increased attention given to the quantitative approach, and all students will be required to show substantial success in the mathematical and statistical areas.

Improving the Work of Teaching Assistants

The college plans a program to be inaugurated next year for improving the quality of the teaching done by graduate assistants. For many years there has not been enough attention given to this matter. The new program will provide critical review of the teaching in the classroom, teaching seminars will be used and promotions will be more closely correlated with improved teaching performance. This program is intended to provide better instruction for the freshman and sophomore students and to provide well-prepared teachers for the colleges and universities who will employ our graduate students.

Economic Education

The work in economic education has shown substantial growth and accomplishment under the leadership of Professor Lewis E. Wagner. This work will be expanded and its effectiveness extended in cooperation with the public schools and other educational institutions. There is increasing evidence of the responsibility that must be borne by the college for the preparation of able teachers of economics and allied subjects for the elementary and secondary schools.

Through the work of Professor Wagner the University of Illinois has been designated as the depository for the collected materials on the subject.

As the program gains in national significance it may prove desirable to support the work of Professor Wagner through a center, a bureau, or an institute within the college.

Graduate Programs

The increased interest in and support of graduate education for business indicates the importance of strengthening the graduate programs of the college. Among others, the faculty expects to give greatly increased attention to the education of teachers of business subjects at all levels of endeavor.

For the teachers of large four-year schools of business and departments of business it will be necessary to strengthen both the several master's degree programs and the various doctor's degree programs that are now in operation. In such schools the programming is such that the faculty person can be assigned to a rather specialized area of interest. In many ways it is the kind of assignment that the Ph.D. programs were established to meet. A thorough review of the graduate curricula is planned in an effort to strengthen the 400 level courses and generally improve the tone of the traditional graduate operation. This is essential to provide adequate preparation for college and university teachers. It is particularly difficult to accomplish under our present form of organization.

There is also increasing evidence of the need for teachers in programs where the same extent of professional specialization is not required and does not meet the need. Specifically we refer to teachers of economics and business subjects in high schools, junior colleges, and the small four-year colleges. The Graduate School of Business Administration has new programs in the developmental stage to provide the kind of teacher training that is necessary in these cases. Under the chairmanship of the Associate Dean, a new one-year master's program and a two additional years doctor's program will be developed. These programs will integrate special courses in the several pertinent disciplines to the extent necessary to prepare the teachers for their assignments. It is expected that these programs can be put into full operation at the beginning of the 1963 summer session.

The training of teachers in the technical and vocational areas that will be involved in the growth of technical institutes in the state also must be explored. The college will also provide the necessary training in these areas. Programs are in the developmental stage.

One of the major difficulties that has been encountered is the lack of financial aid for promising candidates desiring to enter the graduate and professional programs. There is a constant and very extensive loss of able professional students to other schools where there is more help available in the form of financial aid. The Commerce Alumni Association

plans to assist the college on this problem, and the Graduate School of Business Administration is developing a program of Associates for the School. Funds are also needed for loan programs and continuing efforts will be made toward obtaining them.

Professional Programs

A substantial increase in enrollment is anticipated in the Graduate School of Business Administration. New business simulation techniques will be introduced and new faculty members prepared to teach in the new areas will be added to the programs. There are four professional degree programs, the two-year Master of Business Administration degree, the one-year Master of Commerce and Master of Accounting Science degrees and the two years beyond the master's, Doctor of Business Administration degree. Increasing attention will be given to the quantitative and analytical approaches in these programs and integration will be made with the behavioral sciences. A new program in international business is planned within the school. An interchange of teaching and research experiences between college faculty persons teaching at European universities and visiting faculty members from European countries will give strength to the international business program. There is increasing evidence that one of the exports so badly needed to underdeveloped countries is the business and management competence developed in American industry. Progress in this area is one of the goals of the school. This goal fits in with the general purpose of preparing educated and widely experienced executives for business and government operations of all kinds.

Research

The College expects to expand its research activities substantially. The Bureau of Economic and Business Research continues to receive aid for the development of its research programs. During the past year, the Consumer Savings Project financed by the Ford Foundation and the United States Department of Agriculture has been brought to a conclusion. A number of significant publications will be forthcoming from this project. A summary volume on the project is also being prepared, and probably will be completed during the next year. Indicative of the recognition attached to this work is the receipt of \$250,000 in new grants to continue research in consumer savings behavior. Among other things, this money will enable the project to participate with the Federal Reserve Board and the United States Bureau of the Census in a proposed national survey of family financial characteristics next year.

PAUL M. GREEN
Dean

COLLEGE OF JOURNALISM AND COMMUNICATIONS

Professor Mitchell V. Charnley of the University of Minnesota, former President of the Association for Education in Journalism, recently described college education for journalism in the United States as "running through two 'periods' and taking long steps into a third." Of the first two periods, Professor Charnley remarked:

The beginning period was characterized by what was often appropriately referred to as trade-school training for newspaper work; the second emphasized a shift to "mass communications," to all the mass media, to their vastly varying functions, and to journalism as a social instrument, an element integrated into a complex civilization.

Regarding the third period, Professor Charnley quoted "some prophecies" of a Minnesota colleague, Professor (now *emeritus*) Ralph D. Casey:

That education for journalism will continue its orientation toward understanding of the major currents of society . . .

That four-year programs will continue to move toward a five-year pattern; but that these will be programs combining professional and liberal arts education . . .

That solution of the problems of mass communications through greater understanding of the behavioral sciences will continue to demand that schools develop and make integral in journalism education both the methods and the products of communications research. . . .

This analysis depicts accurately past developments at the University of Illinois College of Journalism and Communications and its plans for future programs. In the nation-wide picture Illinois may make a fair claim to have led rather than reflected such developments.

Just prior to World War II, the then School of Journalism offered forty-five undergraduate courses, nine of them open to freshmen and sophomores, and none of them for graduate credit. Almost all "journalism" courses were oriented to newspaper practice. Of five courses offered in advertising, four dealt with newspaper advertising exclusively; only one course dealt—partially—with radio, and none, of course, with television. These courses were taught by a staff of fourteen (plus two co-operating from other departments), the backgrounds of many of whom emphasized professional newspaper experience; only two held the Ph.D. degree. Any activities in the school's additional functions of public service and research were carried out by members of the teaching faculty; the University's radio station was under the University's director of public information, and the Institute of Communications Research did not exist.

In contrast, in 1961-62 the Department of Journalism offered thirty-six courses, no more than eleven emphasizing newspaper journalism; of these thirty-six, ten were open only to graduate students, thirteen to

graduates and advanced undergraduates, eleven to advanced undergraduates, and two to sophomores. The Department of Advertising offered sixteen courses, five to graduates exclusively, seven to graduates and advanced undergraduates, and four to advanced undergraduates. The Department of Radio and Television offered twenty-two, five to graduates exclusively, ten to graduates and advanced undergraduates, and seven to advanced undergraduates. Twenty-two members of the teaching and research staffs held the Ph.D. degree. In the area of public service, WILL-AM-FM-TV had been brought under the jurisdiction of the college; so had the Institute of Communications Research, established in 1947 as an independent unit of the University.

Much of the direction of the college's educational program has come from the interdepartmental courses and curricula committee, established in 1957 to suggest and evaluate desirable academic goals. A comprehensive set of recommendations adopted in 1959 involved, in general: (1) continued emphasis in all courses on critical examination of communications methods; (2) continued emphasis on the relationship of communications methods to other fields of knowledge; (3) correlation of existing courses to fit a pattern of logical educational objectives and deletion of courses found wanting; (4) meeting needs of the gifted student; (5) meeting, within a broad and flexible core program, students' special interests; (6) continued study of the college's graduate program.

The effect of these recommendations can be inferred from some of the course and curricula changes during the past two years: revision of Journalism 311, formerly Newspaper Law, now Law and the Press, or Radio-Television 264, formerly Radio Acting, now Radio and Television Performance; deletion of Journalism 328, Industrial Publications, or Radio-Television 357, Television Staging and Lighting; deletion of the publication management curriculum, with its program incorporated into a group of special interest areas available to the news-editorial (journalism) major; establishment of Advertising 483, Advertising and the Mass Media, or (starting next year) Radio-Television 360, Educational Uses of Television and Radio; addition of Psychology 100 as a graduation requirement in the advertising curriculum, and adjustment of requirements in that curriculum to encourage students to take courses in philosophy. For the most part such changes have been aimed at de-emphasizing somewhat the narrowly technical part of the student's education, making it broader and more flexible, and integrating it more effectively with his work outside this college (which normally consists of 75 per cent of his total four-year program) in liberal arts and sciences. A report of the American Council on Education for Journalism, which last spring re-accredited the college's three curricula, noted the college's "intense and praiseworthy interest in . . . social science aspects of journalism."

The college will continue along these lines. An *ad hoc* committee's report in January, 1962, concerned establishing a number of courses in "communications" (as distinguished from journalism, advertising, and radio-television), initially at least in the Department of Journalism, where a climate favorable to their development exists. The report stated in part:

... In communications courses, discussion would be expected to cut across ... all departmental lines. It might cut across lines of print and electronic communication; across lines of informative, persuasive, and entertainment communication; and across lines of mass and interpersonal communication ... As regards purpose, the committee sees a distinction in emphasis between *academic* courses, in which the chief aim is to add to a student's body of knowledge—to enable him to understand the communication process—and *professional* courses, in which the chief aim is to make him an effective practitioner of his craft. As regards approach, communication courses should have no commitment to current ideology or practice other than the commitment of scientific analysis and evaluation. It is understandable that some professional courses should, in some degree, be so committed.

We wish whatever group of communications courses is developed to fulfill at least three functions: first, they should give support to the present departmental curricula. ... Second, they should function as a service program for students in other colleges, most probably those majoring in humanities and social sciences. ... Third, they should provide orientation for undergraduates—and graduates—considering work in the Ph.D. program in communications.

Consequently, the present Journalism 101 course is being revised as an over-all introduction to communications; and the committee anticipated "within a reasonable time the establishment of other courses in such fields as theory and process, systems, and history of communications." All revised and new courses will of course be evaluated by the college's courses and curricula committee and acted on by the faculty.

As the committee report indicates, closer correlation is being sought between undergraduate and graduate programs. Graduate enrollment last fall was at an all-time high, with thirty-seven students enrolled in the master's programs of the college's three departments and forty-one in the interdisciplinary Ph.D. program. The number of graduate students in communications fields has increased to more than one-third the number in the two-year undergraduate program, and it is thought that this trend will continue.

Plans for community service broadcasting involve considerable expansion of television station range, studio space, personnel, and programming. In the past two years while radio station WILL-AM-FM was continuing its traditional educational, cultural, and informational broadcasts, a strong promotional program has acquainted a significant segment of East-Central Illinois television viewers with the relatively new WILL-TV. Its air time has been increased and new cultural and public affairs programs (for example, "The Play of the Week," "The Ragtime Era," and "Basis for

Decision") seem to have effectively held new, larger audiences. Emphasis on similar programs will be continued. At the same time, WILL-TV provides facilities and manpower for the University's instructional TV program, administered through the provost's office.

The college's activities in research over the past five years also won praise from ACEJ last spring. The principal instrument is the Institute of Communications Research, an interdisciplinary group. The institute's purpose is to conduct basic research on all human communication. Some direction is provided by an interdisciplinary advisory committee drawn from University scholars in the humanities and social sciences. Individual members of the institute are free to pursue their own research interests, and those interests range widely. The director is in charge of a project to obtain evidence on the commonness of meaning systems across various cultural and language groups and to develop standardized instruments for measuring attitudes, stereotypes, and values in different parts of the world. Research is being done in Finland, Japan, India, China, Belgium, Holland, Lebanon, Iran, and Afghanistan as well as in the United States.

Another staff member is completing a study of the portrayal of education and the educator in mass media on both sides of the Iron Curtain; research is being done in England, Austria, France, East and West Germany, Hungary, Poland, Czechoslovakia, and the Soviet Union. Other research projects vary from a study of space satellite communication to the image of professional journals for psychologists.

THEODORE PETERSON
Dean

COLLEGE OF FINE AND APPLIED ARTS

Long-range planning in the College of Fine and Applied Arts must be considered departmentally, because of the very different programs involved. Many aspects of such plans are contingent upon physical facilities. Two of the four teaching departments in the college have for several years limited enrollment of incoming freshmen and transfer students, a third administers a special entrance examination and the fourth is currently proposing new and more rigorous entrance requirements. Consequently, we do not expect to have a significantly larger number of students (unless general University policy demands it) but we should have a group better able to benefit from the specific programs.

Architecture

There is an increasing realization in architectural education of the need for greater emphasis on general education as a preliminary to professional study. A step has already been taken in this direction by the institution of more specific high school requirements and it is probable that additions to the curriculum will fortify this. The program is now a five-year one; some consideration is being given to a six-year program, with an A.B. degree at the end of four years and a Bachelor of Architecture at the end of six.

Within the program itself, it is probable that there will be increasing attention to the total environment, with problems dealing with urban renewal, industrial parks, real estate, and financial studies. There needs to be a greater amount of attention paid to the increasing importance of building equipment (often 50 per cent of a building budget). It may be desirable to develop a specialized option in building equipment.

There is great need for a program of architectural research. A small beginning has been made with structural model testing, and it is hoped that this and other investigations can be carried on, some in close association with the Small Homes Council-Building Research Council. More educational cross-ties should be developed between the Departments of Architecture and City Planning-Landscape Architecture.

Art

Recent developments have included a modest beginning of a new program in photography, which is much needed, the establishment of the policy of a rotating visiting professorship, occupied by a series of distinguished and active artists, the expansion of the offerings in art history and a much needed reduction in the proportion of graduate assistants to regular staff members. Two new options, in crafts and in

sculpture, have been approved and are in operation. A proposal for a doctoral program in art education has been forwarded to the College of Education and is being studied there.

This latter has been asked for from several of the other state schools in Illinois and it is logical that this degree be offered here. No other doctoral program is presently being considered.

It is probable that the existing curricula will be restudied with the aim of increasing the general education requirements. It is hoped that it will be possible to increase the amount of work available for nonprofessional undergraduates from other colleges. It is not easy to develop an honors program in a department which already has so much individual work, but study should be given to special work for superior students.

The graduate program in all fields should be expanded and is now held back very largely because of space restrictions. There is much to be done in the development of public service and extension work in this field. Certain basic changes in course scheduling are now being studied and may lead to greater use of available classroom space. There is great need for much more studio space for staff artists, many of whom are provided with no place to carry on essential creative work.

City Planning and Landscape Architecture

It seems obvious that professional training in these areas cannot be adequately completed in a four-year period and both programs are moving toward increased requirements. Landscape architecture will probably add a required summer session to the undergraduate program and another to the master's program, so that the total program will occupy five years and two summers. City planning may propose two years of college preparatory work, followed by three years of professional training, leading to the bachelor's degree. This would be followed by a full year and probably an additional summer for the master's degree. At the same time, entrance requirements are being restudied so that students will enter the program with more specifically required high school subjects.

The summer courses which are contemplated would make use of the resources at Robert Allerton Park and the Morton Arboretum and would be similar to the field camps which are required by geographers and surveyors.

It is expected that there will be a distinct increase in the proportions of the graduate program in both fields. This may be particularly true in city planning, which in many universities is an exclusively graduate program. There is room for more students, professionally, in these fields, and steps should be taken to increase the awareness of young people in the opportunities available in them.

Music

In recent years extensive revisions have been made in the basic undergraduate program, and a substantial increase in general education requirements has been effected. The graduate program is now complete, with work available in musicology, performance, theory and composition, and music education. The most significant development in the college in recent years has been the graduate program in music.

Two new fields need to be developed: ethnomusicology and the history and theory of jazz. Promising beginnings have been made in electronic music. Much remains to be done in the development of public services, radio and television and other types of performance.

The future of the School of Music is very largely bound up with its physical facilities. It is now operating under great difficulties and cannot make needed expansions without more space. It is very difficult to make long-term plans unless we have some indication as to whether many of these basic needs will be cared for. The number of students is severely limited by available practice rooms, and such things as the Opera Group can develop properly only if proper space and equipment are provided.

Other College Divisions

The future of the new Krannert Art Museum will be largely dependent on available budget. It is hoped that it can develop an expanded program of exhibitions and that it will be able to make regular and important additions to its permanent collections. The Bureau of Community Planning has recently become an independent administrative unit in the college and is becoming increasingly involved in state-wide planning programs. There will probably be a greater number of continuing relationships with other state agencies. The Small Homes Council-Building Research Council has gone into a new phase, indicated by its change in title, so that it is no longer confined to problems connected with small residential structures. Its studies will no doubt expand substantially in the future. The University Bands have no plans for any significant change in their program.

ALLEN S. WELLER
Dean

COLLEGE OF PHYSICAL EDUCATION

Introduction

There is no master plan for the College of Physical Education which states specific goals to be reached over a projected period. Such a plan may be developed following the proposed curriculum evaluation next year. In 1957 the School of Physical Education became the College of Physical Education and comprised the Departments of Health and Safety Education, Physical Education for Men, Physical Education for Women, Recreation, and the Student Rehabilitation Center.

In 1961, acting on the recommendations made in the report of the Senate Committee on Athletics, the president transferred intramural athletics from the Athletic Association to the College of Physical Education, adding thereby still another unit.

The only change contemplated in the structure of the college at this time is the addition of a Department of Dance. This area now has both an undergraduate and a graduate program, and it is felt that this move would represent a better operational pattern than the present one, in which dance is administered through the Department of Physical Education for Women.

Some changes in the general operation of the college may occur when most of the faculty members of three departments are located in Huff Gymnasium early in 1963. It is the goal of the administration of this college to provide the opportunity, the stimulation, and the proper atmosphere for carrying out the highest quality teaching, research, and service which the members of this faculty can perform on this campus and throughout the state of Illinois. Efforts of the individual departments and divisions are coordinated and directed toward the common good of the college as a unit.

Research

In the Department of Health and Safety Education greater emphasis will be given to experimental, laboratory studies and less to those of the normative-survey variety. The following areas lend themselves well to this type of investigation: safety and driver education, school health services, physical growth and development, public health education, health and safety text materials.

Renewed emphasis will be given to research projects conducted in the Human Movement Research Laboratory under the direction of the Department of Physical Education for Women.

Plans are now being made in the Department of Recreation to develop a research center directed by a research professor and operated by an

appropriate staff. This center will be adapted to interdisciplinary research in cooperation with the behavioral sciences.

An effort will be made to conduct basic research to increase the levels of acceptability and productivity of individuals with severe physical disabilities. Specific areas where great need is already evident would include: pre-college programming and evaluation, testing and counseling, functional training, practical prosthesis, facilities specifications, recreation, attitudinal studies, and basic biological and psychological studies of particular disabilities, their manifestations and responsiveness to specific programming.

Considerable effort will be devoted to program development and student interest research in the new Division of Intramural Activities. An entirely new format in this area is anticipated and will require extensive investigative effort.

Programs

Starting in the fall of 1962, evaluation committees in each of the departments will review both undergraduate and graduate curricula for the purpose of bringing these programs in line with their intended objectives. An all-college conference will be scheduled to review and act upon the findings of the evaluation committees.

The following new curricula are being studied with a view to their possible adoption as regular programs of the college:

In the Department of Health and Safety Education—an undergraduate curriculum with a major in safety and driver education, leading to the B.S. degree in Safety Education; a graduate program with a major in safety and driver education; a graduate program with a major option in (1) health education, (2) safety education, (3) physical growth and development, leading either to the Ph.D. or Ed.D.

Currently under study is a plan for offering the Doctor of Education degree in cooperation with the College of Education.

A committee representing the departments of Physical Education for Men and Physical Education for Women is designing a physical education foundations course which represents a new approach. The new course will provide an orientation to physical activity, including fundamental physiological principles covering exercise and basic health information for University freshmen.

A new curriculum is under study by the Department of Physical Education for Men for students who wish to pursue work in areas other than public education. Plans are also under way in this department for the development of a curriculum for specialists in exercise therapy.

The Department of Physical Education for Women is investigating the possibility of offering a four-year pre-physical therapy curriculum. Such a sequence could be arranged with very few new courses, and its success-

ful completion would meet the bachelor's degree requirement in physical education and entrance requirements for physical therapy training schools approved by the American Physical Therapy Association.

The Department of Recreation contemplates the development of curricula (and appropriate courses) in the fields of municipal park administration and therapeutic recreation (recreation for the ill and handicapped) at the undergraduate and graduate levels. Recreation also contemplates the establishment of an institute concerned with problems and services related to recreation and leisure.

Consideration is also being given to creating undergraduate and graduate curricula in rehabilitation, for example: graduate training in rehabilitation administration; and a general undergraduate curriculum in rehabilitation in preparation for graduate training in rehabilitation, counseling, recreation, therapies, and administration. Plans are being developed to broaden and intensify existing cooperative curricula relating to rehabilitation, for example: graduate rehabilitation counselor training; special education; and occupational therapy.

The Division of Student Rehabilitation plans to offer in-service training to individuals, agencies and organizations interested in any aspect of our program, in particular the planning of educational and recreational opportunities and services to the physically disabled at other universities, schools, and within the communities.

It is felt that once the new intramural activities program becomes established permission may be requested of the Graduate College to offer a master's degree program in intramural activities administration.

We anticipate that in-service health and safety institutes or workshops will be offered to Illinois teachers and school administrators and others.

In all of its curricular areas the college recognizes the need to work closely with Illinois junior colleges. This will be necessary in order to reach common agreements and to insure the smooth academic progress of junior college students who transfer into the University.

A number of new courses have been discussed as necessary additions if we are to realize some of the plans stated above; in the Department of Health and Safety Education: Physical Growth and Development, Consumer Health Education, Advanced Personal Health, Adult Health Education, Health Education for Administrators, Safety and Driver Education for Administrators, Health and Safety Education for College Teachers, Disaster Preparation, Philosophical and Scientific Bases of Safety, Safety Education 490 (Seminar), Safety Education 493 (Special Projects), Safety Education 499 (Thesis). The Department of Physical Education for Women is laying plans to provide certain undergraduate courses in physical education and in dance on an extramural basis.

Services

There will be a continuation and expansion of the selected services, in Illinois and elsewhere, which require the kinds of expert ability found at University level, such as work with the Illinois Joint Committee on School Health; the Illinois Division of Traffic Safety; the Office of the Superintendent of Public Instruction; the Secretary of State's office; and the various state, regional, national, and international agencies with which this college is associated.

Before the end of the next year most undergraduate and graduate level counseling will be decentralized. This pattern should become the core of a revised and strengthened all-college program of student personnel services.

Efforts will be made to afford the physically disabled the opportunity for all those experiences which are so much a part of the college education and available to other students. We will seek to provide more curricular opportunities and more avenues of professional endeavor for the severely disabled by careful evaluation of curricular content and by better understanding the true potential of various physical disabilities.

The Division of Intramural Activities will endeavor during the next several years to embark upon an extended program of services to students, faculty, and staff members. The traditional competitive tournaments will be augmented by informal, unorganized leisure time pursuits. Particular emphasis will be given to coeducational activities for both single and married students.

Faculty and Staff

In the development of several new programs the Department of Health and Safety Education wishes to secure additional staff members for instruction and research in the area of physical growth and development and field consultants in safety and driver education and school health education at the state level. One interdisciplinary staff member may be needed to work with the Illinois Department of Public Health, the Office of the Superintendent of Public Instruction, the Office of the Secretary of State, and the University of Illinois Highway Traffic Safety Center.

At the earliest opportunity the staff of the present Division of Intramural Activities will be expanded to meet its needs.

An effort will be made to increase the number of outstanding young professional men and women selected from various disciplines to work in the Student Rehabilitation Center while pursuing graduate work.

Plans are under consideration to develop an in-service program for the staff of the Student Rehabilitation Center so that each member will become more effective in his field and in his relationship to other disciplines within the center.

A continuous effort will be made to determine areas of greatest faculty weakness and strength. Departmental weaknesses will be kept in mind so that they can be corrected when faculty members are employed. Faculty strength will be recognized in the development of curricula and the promotion of research.

A continuous effort will be made to upgrade the quality of faculty in all departments by insisting whenever possible that new faculty possess the terminal degree.

Facilities

It is the goal of the college to provide indoor and outdoor teaching stations in accord with recognized classifications and standards.²⁶

In order to accommodate the increased enrollment anticipated by 1970, additional construction will be necessary, involving the addition of wings to the Women's Gymnasium and Huff Gymnasium and construction of an Intramural Coeducational Building—the whole to provide approximately 255,346 gross square feet.²⁷ In addition, an instructional research material laboratory for health and safety education and a driver education instruction range are planned.

When existing space is vacated in Huff Gymnasium, we hope that a variety of changes can be made, including the consolidation, rearrangement, and conversion of present facilities to provide more and better offices, conference and study rooms. A continuous effort will be made to rehabilitate all existing structures. We shall also seek to insure that facilities throughout the campus are modified or planned in a manner which will make them accessible to the physically disabled.

Research, space, and equipment will be an integral part of the new rehabilitation center now in the planning stage. It will facilitate research that could not be done as effectively and authoritatively anywhere else. Plans are now being completed to develop a facility in which the rehabilitation-education program can be headquartered and one which will properly facilitate all of the professional training, research, and services which are a part of the present program and also a part of the projected program. A new center is currently in the planning stage.

Public Relations

It is the objective of the college to provide a suitable climate for teaching, for carrying on research, and performing services in a man-

²⁶ Estimates and standards are based on Sapora, A. V., and Kenney, H. E., *A Study of the Present Status for the Needs and Recommended Standards Regarding Space Used for Health, Physical Education and Athletics*, (Stipes Publishing Company, Champaign, 1960).

²⁷ Described more fully in a memorandum from H. E. Kenney to the Buildings and Fields Committee of the College, May 9, 1962.

ner which will meet the challenge of the times. To do so the college must be firm in its determination to accomplish these objectives but flexible in its ability to adapt its educational programs to the identifiable needs of a changing society.

The extent to which the college will be permitted to serve the needs of society will depend on four major factors:

1. How much the role of the college is understood.
2. How the people of Illinois feel about the needs it is attempting to meet.
3. How the people feel about the methods it is using to meet these needs.
4. How the people feel about the quality of its performance.

A sound public relations program should be directed to these four considerations to the end that people may be better served. More specifically, the goal of the public relations program of the college will be to increase the educational impact of the college upon the people of Illinois and the nation.

This goal is in keeping with a statement released by the President's Commission on National Goals: "The development of the individual and the nation demand that education at every level and in every discipline be strengthened and its effectiveness enhanced."²⁸

As soon as the budget will permit, a half-time assistant will be assigned to the office of the dean. This person's major responsibility will be the coordination of the public information program of the college with that of the University. A job analysis and the rationale for the position is included in "A Basic Policy Statement" prepared by the Public Relations Committee for the College in 1962.

KING MCCRISTAL
Dean

²⁸ *New York Times*, November 28, 1960; pages 22-23.

COLLEGE OF VETERINARY MEDICINE

Veterinary Medicine is today being asked to solve unprecedented problems involving a broad spectrum of health and disease—parasitic, infectious, metabolic, deficiency, hereditary, and toxic. The latter group includes diseases resulting from contamination of the environment with radioactive substances, so-called agricultural poisons and fossil fuel residues. The newer techniques and instrumentations of research afford invaluable means for combating disease; yet genuine gains against the various forms and adaptations of disease have not been great. Jet transport may accidentally carry a disease agent or affected individual from one part of the world to any other in less than 20 hours. The “population explosion” is forcing greater contact among all members of the animal kingdom, including man, thus favoring the facility of spread of contagions. Man-made changes of the environment result in new adaptations and mutations of disease agents so that new and baffling variations are certain to appear.

These stark facts emphasize that we cannot temporize with disease. All of the forces and resources of basic and applied research must be joined and adequately supported to meet its challenges.^{29, 30}

Professional College

The University's Veterinary Medical College is unique in that it is the only institution in Illinois offering professional and graduate education in veterinary medicine.

The high building and operating costs of colleges of veterinary medicine, like those of medicine, emphasize the urgency, in the face of unprecedented needs and pressures, of immediate planning and expansion of the college's teaching, research, and service capacities. A new physical plant to provide adequate modern facilities for clinical medicine must soon be provided to meet the college's top priority need.

The long-range expansion could be accomplished most efficiently and economically by enlarging the college and its staff rather than starting a new school. Full-year, quarter, or trimester programs would efficiently expedite this imperative expansion with the least delay.

Both the world and national situation indicate that only by at least

²⁹ “Ten-Year Plan for the College of Veterinary Medicine, University of Illinois.” submitted to the president, April, 1957.

³⁰ “Projected Needs of Veterinary Medical Education, Research and Public Service in Illinois to 1975,” (prepared in May, 1960 for the Committee of the Illinois Commission on Higher Education surveying “The Scope and Function of Public Higher Education to 1975.”)

doubling its capability for education in the professional college and redoubling its graduate program capacity could Illinois begin to meet its obligations. If the state were to educate veterinarians in numbers commensurate with its expanding population and burgeoning needs, it would have to graduate 129 each year by 1975.³¹

The enrollment limit, initially imposed at forty, was raised to fifty in 1956-57. This step was taken with the expectation that adequate facilities for teaching the 25 per cent additional students during their "clinical years," beginning in 1958-59, could be provided. While no buildings were constructed, there is still hope that funds can be assigned for planning a Small Animal Clinic and Hospital, the college's first priority item, to be constructed during the 1963-65 biennium with new appropriations.

Although the enrollment in the college this year is 18 per cent greater than in 1955-56, the same factors that caused shortages of applicants of superior quality in schools of medicine, dentistry, and engineering have kept the enrollment quota from being filled during the past two years. Nevertheless, the excess of applications over available places in the first-year class, which the college expected to materialize in 1963, appears to be developing in 1962.

The high cost of the six years required to qualify for the Doctor of Veterinary Medicine degree is a serious obstacle for many capable individuals who desire a career in this profession. The decision of the University Committee on Undergraduate Scholarships and of the administration that students in the first two years of the professional college curricula would be eligible for University scholarships is a favorable step. Likewise, the anticipated future eligibility of veterinary medical students for state and county scholarships, previously limited to students in agriculture, is encouraging. The College of Agriculture's administration has endorsed action in the latter direction.

Through recent action the preveterinary medical course requirements may be "officially" completed in the College of Agriculture as well as in the College of Liberal Arts and Sciences. The former offers the preveterinary medical student a more favorable option of work toward a degree in agriculture should he fail to complete the preveterinary medical requirements.

Major revision of the curriculum to meet the rapid changes in animal management and production, stemming from advances in science and technology as well as in teaching methods, has been approved by the Urbana-Champaign Senate. A result of the revision will be shifts in

³¹ C. A. Brandy, "Can the Need for Veterinary Medical Education Be Met by 1975?" *J. Am. Vet. Med. Assoc.* 138 (1961) 272-274.

emphasis and approach involving other colleges where veterinary medicine students take courses.

Graduate Program

The full-time equivalent of graduate students in Veterinary Medical Science has more than trebled in the last two-year period. This expansion has been made possible by faculty additions (the latest an assistant professor) through a supplement to a National Institutes of Health post-doctoral training grant in pathology, and by substantial increments in research funds from federal and private sources.

It is apparent that the present enrollment must be doubled to fulfill the mushrooming demands for veterinary medical scientists—for teaching and for research, basic and applied. The recent availability of attractive stipends has provided opportunity for many capable D.V.M.'s to undertake graduate training which would otherwise not have been possible. Thus, a rich reservoir of talent is being provided, the educational and training responsibility for which the University's Department of Veterinary Medical Science must assume as a continuing obligation. To meet the anticipated increase in qualified applicants for graduate study, the completion of plans for three new laboratories and four animal rooms, by remodeling the Research Annex (through early release of funds already allocated by NIH and the University) will be a major step forward.

The Illinois Center for Zoonoses Research, established in 1960 as a component of the college, affords a nucleus of material and faculty talent of exceptional strength and potential for graduate training. It will behoove the University to supplement to the fullest extent possible its support of this unique and promising venture as a means of furthering education and the public interest. Presently, applications for funding a zoonoses research building as well as institutional research support are pending with federal agencies and private foundations.

Undergraduate Teaching Program

The college's obligations in this area include teaching courses in: (1) animal hygiene to students of agriculture and of other colleges; (2) physiology for animal science and dairy science students; and (3) disease prevention for the winter short course in agriculture. Enrollments have increased somewhat and course outlines and subject matter have been revised. Development of additional and new visual aids is being and must continue to be carried out.

The 1960 proposal³² for developing and establishing a four-year curriculum and faculty for training veterinary medical and medical tech-

³² "Outline of Objectives and Required Developments in Illinois through 1975," memorandum submitted to the president, 1960.

nologists has been followed by active planning by the College of Medicine and other colleges in establishing such curriculum in medical technology. This college has been asked to participate.

Extension Education

Allotment of salary for a full-time assistant professor by the Director of Agricultural Extension in 1961 increased the full-time equivalent of the veterinary medical faculty in this area to 2.3. Nevertheless, major, continuing, and new problems of animal disease and their direct as well as indirect impact on human health emphasize the need for additional personnel to provide continuing education for animal owners as well as for practicing and regulatory veterinarians of Illinois.

Research

Limitations of facilities and personnel as well as funds, beyond the substantial increases in support that have come from federal and other outside sources, prevent effective research effort on diseases which are responsible for continuing tolls upon the Illinois animal industry. Among these diseases are bovine mastitis, hog cholera, infant pig encephalitis, and paratuberculosis. It is patent that the state's livestock wealth warrants a much larger commitment of funds and other resources to such research. During the past five years, the state and experiment station funds for the Veterinary Medical Research program have increased only 31 per cent as compared to 525 per cent from outside grants.

The completion of the Veterinary Medical Research Building in 1961, after nearly five years of effort, with matching funds from the University, NIH, and industry, has been a boon to the college's and University's program. Initiation of a "matching funds" addition to the diagnostic and research annex of the Veterinary Medical Building, committed in 1961, will lead to substantial reinforcement but not fulfillment of the needed facilities.

The research program is of course inseparable from that of graduate training, for which approximately 15 postdoctoral fellowships have been provided by the NIH, the Illinois state and the American Veterinary Medical Associations. An additional assistant professor in radiobiology and pathology is being provided by a grant from the Division of General Medical Sciences, National Institutes of Health.

The proportion of basic research in veterinary medical science is being steadily increased with the advantage of the latest precision instrumentation and techniques. Subprofessional and technical personnel, afforded by outside grants, have undergirded the intensity, scope, and efficiency of the research effort. Interdepartmental collaboration within the college and with other colleges has expanded. More opportunity for greater participation in research by more and more graduate students has been mutually salutary.

That the pioneering program of the Illinois Center for Zoonoses Research, already referred to, will bring additional programs, strength, and benefits from the interdisciplinary attack on disease is a well warranted prospect.

The substantial progress can be attributed to the serious and forward-looking thinking and effort of various key faculty members. Credit must also go to the sympathetic attitude and support of the University administration and to encouragement and assistance of the Graduate College and the University Research Board.

Although limited additions to the physical plant have been made and applications for others are pending or are in the planning stage, early enlargement of the facilities is vital if the veterinary medical research program is to accomplish the three-fold expansion visualized by 1975 and if its responsibility in the interest of better animal and human health and welfare is to be fulfilled.

Public Service

Many continuing and new services are demanded and rendered by the college's resident and ambulatory clinic and hospital and by the diagnostic laboratory, the latter being supported in part by the Illinois Department of Agriculture.

The major deterrent to better public service, as well as adequate quantity and quality of teaching and research, remains the sore lack of acceptable clinical facilities. Even with the most favorable progress toward planning the first phase of the new clinic and hospital during 1961-63, completion of this construction can hardly be expected before 1965. Hence there is the question of the conditional accreditation of the college's graduates by the Educational Council of the American Veterinary Medical Association. Under these circumstances, effective teaching and efforts to meet the competition for top faculty and students will become increasingly difficult.

In concluding this review and analysis of developments and plans in the college, it is evident that the keen interest, diligent effort, and high morale of its faculty and staff have brought about exceptional progress in spite of serious impediments and limitations, particularly those of physical plant and space.

Teaching in the graduate and undergraduate programs, the professional college and in extension has been improved and expanded and courses and curricula revised to meet changing circumstances which impinge on human as well as animal health and welfare.

A fuller recognition of the unity of medicine of mammals including man, of birds, reptiles, and other forms of animal life has led to sounder approaches and significant economies in education for certain areas.

Michigan State University has initiated planning for an Institute of Biology and Medicine which will include teaching the students of medicine and veterinary medicine in the same basic science courses and classes of the first two years of the professional college.³³ Such an approach merits consideration in offering, as already mentioned, the first two years of the medical curriculum on the Urbana-Champaign campus.

The long-range goals as projected in the 1957 Ten-Year Plan of the college and in the 1960 projected needs to 1975 should continue to serve as guide lines in view of developments, although they already appear extremely conservative.

During the past biennium, plans and requests for federal support were made in support of basic research upon the means of establishment and the epidemiology of maximally pathogen-free colonies of experimental animals. The program was conceived to meet realistically the obvious long-range needs of all areas of research in animal biology within the University. Interest was only moderate—other than in the Colleges of Medicine and Veterinary Medicine—and the request for total support for required physical plant was not approved. Nevertheless, the inevitable recognition of the need for research animals free of the hazards of prior or latent disease is developing throughout the University's scientific community. The colleges mentioned have worked both jointly and independently through the limited means at hand to study and develop colonies of germ-free mice and chickens and maximally pathogen-free swine. Future planning and action, if it is to be realistic, must support this important area of development in a proper manner.

Reference to planning and development would be incomplete without consideration of factors of salary that bear so importantly on gathering and maintaining a superior faculty. The college must continue to reward merit while asking support that will guard against the "raiding" of its top faculty by other institutions and against the lucrative inducements of private practice and appointments in industry and commerce. An initial and vital objective must be that of bringing the stipends of the outstanding scientists and teachers, including department heads of the college, to a figure comparable with the average of other departments and institutes of the University.

C. A. BRANDLY
Dean

³³ W. W. Armistead, "Michigan State University's New Institute of Biology and Medicine—The Role of Veterinary Medicine." *Michigan State Veterinarian* 22, 2:60-63.

GRADUATE SCHOOL OF LIBRARY SCIENCE

Of the thirty-two accredited library schools in the United States, the University of Illinois Graduate School of Library Science is the third oldest (founded in 1893), one of the largest (with over 4,000 living alumni in every state and in over forty foreign countries), and one of the half-dozen schools which offer a doctorate. The school is active in the three main areas of instruction, research, and service activities.

The M.S. Program

The basic instructional program of the school is a year-long program leading to a professional degree of Master of Science. About 200 students a year are enrolled, many on a part-time basis; about seventy a year receive degrees. The curriculum was last revised in 1948, and a committee of the faculty is currently reviewing the curriculum again in order to have as appropriate a selection of courses as possible to meet the new and ever-enlarging responsibilities of librarians. For example, a new course to be offered in 1962-63 will deal with the various mechanical devices for the storage and retrieval of information in libraries, and joint programs are being developed with the Departments of Chemistry and Physiology for the preparation of science information specialists and technical librarians.

The Ph.D. Program

Although only a dozen years old, this program has seen the award of twenty-four degrees, and over a dozen students are currently enrolled. This advanced training of selected individuals results in important contributions to the profession, especially in the provision of faculty to other library schools and of college and university library administrators. It makes unusually heavy demands on the faculty and resources of the school, and there is good reason to expect the enrollment to increase in the years ahead.

Extension and Service Courses

For many years the Library School (through the Extension Division) has offered selected courses at widely scattered locations over the state for the special convenience of teachers and librarians. These same courses, on library materials for children and for young adults, are taken on campus by many more students from the College of Education and other schools than from this school. Beginning with 1962-63, the Library School will take over responsibility from the University Library for the undergraduate course in the use of books and libraries, another service course for the College of Liberal Arts and Sciences and other colleges.

Research

In 1961 the Library School established a Library Research Center, the first such unit of its kind in the country. To date it is operating on funds received from the Illinois State Library, although grants from other sources are expected. In addition, individual members of the faculty have long been active in research. There is much need in the profession for research in almost every area of practice.

Publications and Conferences

The Graduate School of Library Science publishes *Library Trends*, a quarterly journal of international repute, now beginning its twelfth year. It also publishes *Occasional Papers* and a book series of Illinois Contributions to Librarianship. For the last several years the school has sponsored an annual conference at Robert Allerton Park on a topic of interest to librarians, and the papers of most of these institutes have been published and well received. About every two years, a series of lectures by a distinguished guest is given in honor of P. L. Windsor, the former librarian of the University and director of the Library School; these papers, too, have been published.

Future Plans

In each of the above areas the school is continuing the programs developed to date, scrutinizing each for possible improvement and for possible pruning or expansion as seems indicated. The faculty are especially concerned with the improvement of teaching (by 1963 two courses will be on videotape) and with the expansion of the research program. Plans are being made for the 75th anniversary of the school in 1968, and it is hoped to have an international conference here on education for librarianship. In 1962 the Library School entered into an agreement with the Inter-American Library School at Medellin, Colombia. The University of Illinois Graduate School of Library Science is one of the foremost schools of its kind in the world, and the faculty propose to maintain and improve its qualitative position in the years ahead.

R. B. DOWNS
Director

JANE ADDAMS GRADUATE SCHOOL OF SOCIAL WORK

Scope and Aims of the Program

The Jane Addams Graduate School of Social Work is one of the professional schools of the University. The broad purpose of the school is the education of men and women for professional practice in social work and their development for social welfare leadership. Within this general purpose, the program reflects four specific functions: (1) graduate education for professional practice, (2) extension teaching for employed social workers, (3) research, and (4) undergraduate instruction in a limited number of preprofessional, introductory courses given as electives through the College of Liberal Arts and Sciences.

The two-year, master's degree curriculum is the school's basic educational program for the profession. This curriculum focuses on the knowledge, understanding, and skills prerequisite to beginning professional practice. Skills in both interpersonal and intergroup relations are emphasized. The development of intellectual discipline and emotional maturity requisite to professional practice are continuous goals. The extension activities of the school are carried out through courses offered throughout the state and by yearly summer institutes at Allerton House. The extension courses have been organized into a series which has unity and focus designed to meet the needs of continuing education for personnel employed in a wide range of social agencies. The Allerton House institutes are more frequently problem-focused and more likely to be related to a particular group of workers in a specific area of social work practice. The school's undergraduate offering is accepted as a minor for majors in a number of undergraduate departments of the University. These courses are particularly useful for undergraduate students who are planning on future social work careers and who thus plan to enter the graduate, professional program after completing their baccalaureate degrees.

The school recognizes its responsibilities for continuously seeking to improve the quality of professional practice as well as to help staff the field. Through research by both graduate students and faculty, study is carried on in such areas as: the nature of social problems, the improvement of methods and techniques for better service, the impact of emerging new problems, and the ability of social work programs to respond to the changing role of the profession.

Recent Educational and Research Developments

Two very recent developments, financed out of National Institute of Mental Health grants awarded the school, offer the opportunity for sig-

nificant contributions to both educational and research activities. The first of these is concerned with study of the educational objectives and learning experiences in field work in community mental health clinics. A new staff member has been added to carry out this study over the next three years. His results will be used not only for revising the educational goals of the students' laboratory experience in field work in psychiatric settings but will also have implications for the entire field work program as well.

The second development is receipt of a grant to establish a school social work unit in one of the public schools in or near Chicago. This unit, under the faculty's direction, will enable the school to study more intensively the services which social work can provide through the public school system to meet problems of students which impede their learning and lead to high "drop-out" rates and other social problems. Again, the services of an additional faculty member are provided through the federal grant.

A third grant to the school, from the United States Children's Bureau, provides demonstration and research funds to plan and test the effectiveness of an educational program for "Training the Non-Professional Person for Licensing Day Care and Independent Foster Homes." This project will be carried out by two faculty members in cooperation with the Child Welfare Division of the Illinois Department of Mental Health. It has important implications for the school's extension and continuing education activities as well as for the social agency's future program in child welfare. These three projects will furnish new knowledge about the areas under study, strengthen psychiatric, school social work, and child welfare in the state and enhance our general educational program.

Future Plans

The school is currently focusing attention on ways of expansion of both educational activities and research. A 1960 study of social work manpower revealed an extreme shortage of trained personnel in social welfare. Recent reappraisal of public welfare programs across the country emphasizes the need for increased professional services in these programs, thus intensifying the already existing critical deficiency in personnel. To meet the personnel needs of Illinois social welfare agencies as well as the profession generally in the nation, enrollments in the graduate professional curriculum should be doubled or tripled. Extension courses to help upgrade already employed workers will be a continuing pressing need for some time.

To ready the school for this expansion, administrative reorganization of field work teaching responsibilities has been authorized by the faculty executive committee. Faculty members will also serve as liaison representatives to social agencies to consult with them on their staff training needs and plans. For example, the director will serve on an advisory

group to the Educational Policy Committee of the Illinois Public Aid Commission. Funds will be sought from all possible sources to expand teaching, student aid, and research in the interests of increasing the enrollment and course offering in both the graduate program and the extension teaching program.

In the research area a number of project proposals are in process of development. First there is the design of a research program for the school in relation to the Illinois State Children's Institute to be built on the campus by the State Department of Mental Health. It is anticipated that the school will use this facility for a field work educational unit as well as for research. A faculty committee is currently active in outlining a research program.

Another area under study by faculty members and from which future research and demonstration proposals are anticipated is that of school "drop-outs" and juvenile and youth delinquency. Tentative ideas about a preventive and rehabilitative program which might be offered by a University-based youth services agency are in process of refinement into a project proposal. On the basis of this, funds for support for a time-limited demonstration period may be sought. This project may also incorporate a training program for people employed in youth serving and juvenile delinquency central and treatment agencies.

MARK HALE
Director

INSTITUTE OF AVIATION

The Institute of Aviation is the administrative agency responsible for the promotion and correlation of the educational and research activities related to aviation in all parts of the University. Its cooperative relationships extend into all departments and its administrative direction is under a director who has the advice and assistance of an executive committee. It performs educational, public service and research functions.

The Institute of Aviation offers three courses of study: (1) the Aircraft Maintenance Curriculum, (2) the Professional Pilot Curriculum, and (3) general flight training courses. A third curriculum—Aviation Electronics—is being offered for the first time in the fall of 1962. In addition, the institute offers flight training to selected Army and Air Force ROTC students.

The Aircraft Maintenance Curriculum prepares the student to become a technician who can perform or supervise the maintenance of aircraft and engines. It also gives him a fundamental background of knowledge for sales, service, operations, flight engineering, management in the aviation industry, and prepares the student for federal licensing examinations. This two-year curriculum has Federal Aviation Agency (FAA) approval. Classwork is performed in well-equipped shops and laboratories at the University of Illinois-Willard Airport. Approximately 25 per cent of the graduates enroll in another college of the University and successfully complete the requirements for a bachelor's degree. Practically all of them become teachers of vocational subjects. The institute cannot supply the demand for the graduates of the curriculum. A certificate is awarded upon its successful completion.

The Professional Pilot Curriculum consists of 18–22 credit hours in the institute and also of integrated courses in several basic areas of knowledge in the Division of General Studies, College of Liberal Arts and Sciences. Upon completion of this two-year course, the student receives a certificate awarded by the University, plus the pilot certificate and ratings awarded by the FAA.

General flight training is open to all students and staff members of the University on a "first come, first served" basis. Each year, more than 300 FAA certificates and ratings are earned by the flight students. Since the start of the flight training program in 1946, over 4,000 students and 300 faculty have been trained with only one serious accident.

The federal government has been so impressed with the flight program of the University of Illinois that in 1959 it made the Institute of Aviation the first agency other than the Federal Aviation Agency with authority

to grant private and commercial pilot certificates on the basis of its own ground school and flight tests instead of those of the FAA.

The institute, through its Staff Air Transportation Service, renders valuable assistance to many thousands of extension students throughout the state. Where it is difficult to bring the student to the campus it is often easier to take the professor to the student. Were it not possible to fly to and from the extension centers, many excellently qualified staff members would be unable to fulfill the extension teaching assignments they now routinely complete in locations from Rockford to East St. Louis. The total costs of using air transportation are usually less than those of other modes of transportation.

The Institute of Aviation has an outstanding record in the area of research. From experiments with easily visible fluorescent paint on wing-tips to experiments with flight by periscope, a forerunner of astronautic flights, the University has become internationally famous for its aeronautical research.

Perhaps the most outstanding research contribution has been the "180-Degree Turn Experiment." The procedures, which were developed by Institute of Aviation staff members, enable noninstrument pilots, who have inadvertently gotten into bad weather, to make a 180-degree turn out of the bad weather and to return safely to contact flight conditions. Many letters have been received from pilots throughout the United States who are alive today because they practiced the simple lifesaving procedures.

The "Parachute Flares as an Aid in Night Forced Landings" also has been acclaimed as an additional lifesaving procedure for general aviation pilots. Again, the methods were developed by the University's aviation staff members.

Much of the aeronautical research of the University, instead of being done by the institute itself, is channeled into other departments which have the staff, the facilities, and a closely related interest in the problem. For instance, the Institute of Aviation has assisted the College of Agriculture in planning crop dusting demonstrations. Facilities and space have been provided for the Department of Aeronautical and Astronautical Engineering for their research on jet engines.

The Psychology Department has employed not only the institute's aircraft and pilots, but also its students in many of their aviation research efforts. The Institute of Aviation also provides space at the airport for their use as offices and laboratories.

The institute's aircraft have played a major role in flying radio-active isotopes from Oak Ridge, Tennessee, to the University's Betatron Laboratory. Equipment and personnel have been flown to Great Bear Lake in Canada for employment at a tracking station which is maintained by the federal government but supervised by University scientists.

Extension research on cloud formations and rainfall is presently being conducted by members of the State Water Survey at the airport. Not only does the Institute of Aviation provide the necessary laboratory facilities, but it has also specially equipped an institute Piper Tri-Pacer and a twin-engine Beechcraft as flying laboratories. Because the meteorologic staff has been able to carry on its research in such a unique way, its research results have been highly gratifying.

The institute has also worked closely with the College of Medicine in the areas of pressurization and high altitude effects on the human body. The College of Education has planned and scheduled numerous seminars and courses in aviation education. The institute has aided by offering orientation flights to the students.

The College of Commerce and Business Administration has made use of the airport facilities and equipment as a laboratory for the students enrolled in the courses of air transportation and airline management. The additional opportunities made available to these students tend to increase their professional knowledge and practical experience.

In all, more than forty different divisions of the University have benefited from the availability of the airport.

The institute and cooperating staffs have, in addition to their primary research and educational functions, made available to the community certain of the facilities of the airport without charge either to the taxpayers of the state or to the surrounding community. These facilities are available on the basis of unused capacity of the runways and of the terminal building. The income thus received has been sufficient, when added to the legitimate charges against the University use for education and research purposes, to cover the operating costs of the airport.

For the citizens of Champaign-Urbana, and for those individuals who come from all over the United States to visit the University of Illinois, the airport provides necessary facilities for commercial flights. An estimated 2,500 airline passengers a month embark at the airport. The FAA ranks the airport as the 80th busiest in the nation, and as the most active air operation in downstate Illinois.

For many years the airport has been used by the Illinois Wing of the Civil Air Patrol as its primary base for its annual search and rescue training. It is also used as an auxiliary field for the Air National Guard and the flying branch of the State National Guard.

People from all over the world have come to the University of Illinois to discuss the University's air operations with Institute of Aviation staff members and have taken back with them ideas and plans to improve their countries' aviation systems. The two most distinguished visitors have been Prince Sissouphannouvong, Director of Civil Aviation for the Kingdom of Laos, and Mr. Isaac Sy, Director of Civil Aviation for the Re-

public of Mali. The University of Illinois was the only university which either of these gentlemen visited during their tours of the United States.

Throughout Europe, the University has become well known because of the International Air Cadet Exchange program. This program was sponsored by the United States Air Force which requested the Institute of Aviation to act as host, at various times, to individual flying cadets from Spain, France, Switzerland, and Norway.

One of the major public service aspects of the airport is the impetus given to business and pleasure flying. At present the airport has thirty T-hangars which are rented to local businessmen and to pilot-owners. Recently, National Distillers and Chemical Corporation, which has a major plant at Tuscola, erected a hangar on the airport at an approximate cost of \$200,000. The hangar was presented to the University as a gift and then leased by the corporation for its twin-engine aircraft.

The operation of the airport as a part of the University is not unique in this respect. Among the "Big Ten" universities, airports are owned and/or operated by Minnesota, Michigan, Purdue, Ohio State, and Illinois. Other well-known universities which have airports are Texas A&M, the University of Oklahoma, and the University of California.

A further public service is rendered through the publication by the institute of bulletins of an informational nature and by limited advisory service to the airport owners and operators of the state.

LESLIE A. BRYAN
Director

INSTITUTE OF GOVERNMENT AND PUBLIC AFFAIRS

The Institute of Government and Public Affairs renders certain advisory, consulting, and research services to the governments of Illinois and their elected and appointed officials. Using the data acquired in these activities, the staff seeks, through scholarly and popular publications, to advance general knowledge about the science of government and the political process. The institute is itself an autonomous body within the University, under a director responsible to the president.

The institute attempts to explain state and local governmental political phenomena in a fashion that is more satisfactory than the way in which such phenomena have customarily been explained. In order to proceed along this line, the institute staff has sketched out a number of areas of interest and has sought to research these areas using a participant-observer method wherever feasible. Beginning with a study of legislative politics and proceeding through studies of the consequences of personnel reorganization, fiscal programs, budget making, local election contests, the political culture of cities, the reorganization of a defeated political party, and the problem of timing in political affairs, the institute staff seeks to use its awareness of events in Illinois to explain political activity. The inquiries have been rewarding; the method has been successful. The relatively young institute staff remains enthusiastic. Our best guess is that we will proceed in the future with more of the same, save for an ever-increasing emphasis on comparative political analysis.

Participant observation carries with it the need to participate as well as observe. Consequently the pattern has been and will continue to be the acceptance of opportunities to advise and consult with state and local officials, administrative and political, from the governor through political party officials, legislative commissions, code department heads, city managers, and others. However, this consultative function is not and should not be of a kind that involves using the institute as an extension of resident staff.

Although the purely service activity without research overtones is an important part (and from another viewpoint a defensible part) of the work of comparable agencies at other universities, Institute of Government policy is that, as a university agency, it should eschew work that will not result in new knowledge or in the elimination of myth. This leads to rejection of invitations to undertake management surveys, efficiency and economy studies, compilations of data from secondary sources, or drafting of ordinances of interest to particular municipalities. On the other hand, where pure service activity affords special access to persons or to data

that can be used in a broader research framework, the institute will not shy away. Happily, the situation is such that there are more opportunities to combine this latter kind of service and research activity than can be accepted. Proposals that do not meet our two criteria, *viz.*, (1) work of a character that can best be undertaken by a university, and (2) work of a character that will advance knowledge, are referable to private consulting firms, to the Public Administration Service, or to bureaus at some other universities. The institute discharges an important service function by this referral procedure.

There is no likelihood that a staff even twice the size of the present group could cope with all the areas of investigation presently marked out. The institute has and will continue to try to bring competent graduate students into its activities, furnishing access to data and occasionally funds for travel or documents to students who undertake independent research in an area of institute interest. There are no plans to request additions to the institute permanent staff. Given the task we have set for ourselves as spelled out above, the problem of drying up our sources must be considered. As the circumstances develop, the group has been and can be expanded by contract or grant funds for special purposes.

GILBERT Y. STEINER
Director

INSTITUTE OF LABOR AND INDUSTRIAL RELATIONS

At the time the Institute of Labor and Industrial Relations was established in 1947, the Board of Trustees of the University of Illinois directed the institute to "inquire faithfully, honestly, and impartially into labor-management problems of all types and secure the facts which will lay the foundations for future progress." In an effort to follow the board's directive and to make the maximum contribution in its field, the ILIR faculty has made it a practice to review, modify, and augment its graduate teaching, research, and extension programs regularly to keep abreast of new problems and current developments in industrial relations.

The past year was, for the most part, one of consolidation of existing programs and preparation for future activities. In April, 1962, the institute moved into its new building, which necessitated some immediate adjustments in the working patterns. In the long run, the additional classroom, library, and office facilities will ease future adaptation to the anticipated increase in enrollment in both on-campus and extension classes and expanded research activities. New commitments in international programs call for an enlargement of some of the teaching and research activities, and new developments and needs in adult education for labor, management, and public groups throughout the state call for reappraisal and increased emphasis on this function.

In all of its programs, the institute emphasizes the interdisciplinary approach to the study of labor and industrial relations. The faculty is composed of representatives of a number of social science disciplines concerned with problems in the field—sociology, psychology, political science, law, and economics. Although some "tool" courses may be elected by ILIR students, all of whom are candidates for a Master of Arts degree in labor and industrial relations, their basic program is built upon theory and analysis derived from the various disciplines as they apply to industrial relations problems.

Institute students may choose between two study programs. One requires completion of eight units of graduate work including a satisfactory thesis. An alternate ten-unit program, designed to provide broad coverage of institutional and discipline courses, was adopted in 1960 following a careful evaluation of every aspect of the curriculum by a faculty committee and consideration of the committee's recommendations by the total faculty.

Also as a result of the committee's recommendations and in conjunction with introduction of the alternate study program, other curricular

changes were made in 1960. Two new courses were formulated and a third was substantially revised to complement one of the new courses. A year later a new course in comparative international labor movements was added to the curriculum and two additional psychology courses were offered to ILIR students as discipline electives. Other subject areas will continue to be strengthened as present faculty members revise or develop courses and as academicians with particular competencies join the staff on permanent appointments or as visiting professors.

Just as the institute curriculum has been reviewed, modified, and expanded to meet new developments in industrial relations, so also has the research program. Although the interdisciplinary approach continues to be emphasized, each faculty member follows his own interests in developing research projects and uses the theory and methods of his particular discipline to study problems. However, he often invites others on the faculty to serve as consultants or critics of the proposal, the finished report, or both. The faculty is convinced that it can best promote general understanding of labor-management problems and contribute to progress in the field by encouraging freedom of inquiry.

Some research projects are individual studies, others are conducted by a team of two or more members of the ILIR faculty, and still others are cooperative efforts of a member or members of the institute staff and academicians from other universities.

Areas of interest are as varied as methods and approaches. Among the research projects in the international field are comparative studies of methods of labor dispute settlement, economic development and types of industrial relations systems, and the role of the labor movement in Asian industrialization.

Social and economic problems associated with automation are the concern of other researchers. One team is examining long-term unemployment resulting from technologically induced plant shutdowns. Another is investigating the long-run impact of technological and organizational changes on the nature of industrial relations and the structure of the labor movement in the United States and Japan. Two sociologists are studying the impact of technological change on a group of white-collar workers.

Two ILIR economists are working on problems in the gerontological field. An inter-University team has begun an analysis and comparative study of public and private job placement services and programs for middle-aged and older workers; an ILIR staff member is examining economic problems of older workers.

Union-management relations at the local plant level is the subject of a continuing study, begun in 1948. Other research has been in the areas of management decision-making, industrial status of Negroes, creativity

and creative leadership, personality and cultural determinants of social distance, work values and job frustration across occupations, and labor folklore. Research is reported regularly in academic journals and in books and monographs published by the institute, the University of Illinois Press, or commercial publishers.

In its extension function, the University has a responsibility to assist in providing continuing educational opportunities for adults. The institute, through the Division of University Extension, endeavors to implement this function by providing classes, conferences, and short courses on industrial relations subjects for labor, management, and public groups in Illinois. Experience over the past fifteen years indicates that it is possible to bring concepts and factual material of a university level to persons who may not have had college training, because of their interest, experience, and ability to deal with important social and industrial problems and their desire to learn.

Methods, techniques, and subject matter in adult education are necessarily different from those used in the campus teaching program. One- or two-day conferences give participants an opportunity to explore a single topic of current interest in some depth—Comparative Economic and Political Systems, Problems Under the New Federal Labor Law, or the National Labor Relations Act and its Administration, for example.

Subject matter for eight- and sixteen-week classes (two-hour sessions once a week) tends to reflect the educational needs of sponsoring groups within more general areas. Management classes are in human relations, industrial relations, communications, supervisory training, and similar topics are usually covered in two-week short courses on the campus. To avoid duplication in the curriculum, the institute's work with management groups is integrated with programs of other colleges and departments, particularly in the executive development area.

The institute is the only University division working with labor groups. A wide range of subjects and considerable experimentation is possible in such programs. Core areas in labor education continue to be government and public affairs, union administration and leadership, trade unionism, grievance handling and collective bargaining, and labor economics. Response to some experimental "liberal education" courses in the social sciences in recent years was extremely favorable.

Because the trade union movement is faced with the increased complexities and dynamic changes in our economic, political, and social system, its leaders are called upon to carry out new and larger roles in the public as well as the private sectors of our society. Understanding the changed setting in which they are functioning and adapting to the new roles they are called upon to fill requires training of a new and high order. The University not only has an obligation to assist in meeting

these requirements but probably is the only readily available source to provide assistance. There are indications that unions are aware of both the problems and opportunities for education and are now willing to turn to the University for assistance. The institute's ability to respond to needs in this area and further development of adult education for trade union groups will be limited primarily by the availability of staff.

In all of its extension work, the institute and the Division of University Extension make use of faculty experts from other University departments and specialists from outside the University. In turn, ILIR faculty members participate in conferences and short courses sponsored by other departments and cooperate with them in planning and conducting joint programs.

The institute believes that its obligation is to serve all the people of Illinois by promoting general understanding of labor and industrial relations problems and by providing specific services to groups directly concerned with labor and industrial relations. Possibly because of the dynamic nature of its field, the faculty is particularly aware of the need not only to keep up with current developments but to anticipate important problems that may arise.

Commitments have already been made for some future programs; in other areas policy and procedure have been established but decisions must be delayed. In the teaching program, for example, as more students elect the alternate ten-unit sequence, the time will come for a critical evaluation of it and another appraisal of the total curriculum. As of June, 1962, only five students had completed the alternate sequence; a majority of the students continue to earn their degrees under the eight-unit sequence.

The institute will continue to enrich its program by bringing distinguished scholars to the campus as visiting professors or lecturers. During the 1962-63 academic year, three visitors will be on the faculty—one from a Scottish university, one from an American university, and the third from government. An industrial sociologist from The Netherlands and an economist from Japan will be visiting research associates.

The next few years will see continued expansion of international programs—exchange of faculty and students with universities in other countries, comparative studies of industrial relations and related problems, and, in some areas, international cooperation on research projects. Information and understanding derived from this type of activity assume added significance with the increasing importance of international problems to our domestic economy.

Within the next year, the labor and management extension programs will undergo a critical appraisal with a view to developing new areas and perhaps reallocating limited staff resources. The opening of the Uni-

versity of Illinois at Congress Circle, Chicago, in 1964 will make it possible to expand adult education in that region by making use of the faculty and facilities there.

The institute plans no change in general policy. Although labor and industrial relations problems have changed markedly over the years, the directive of the Board of Trustees is as meaningful in 1962 as it was in 1947 and it will continue to be applicable to future ILIR programs.

MARTIN WAGNER
Director

DIVISION OF UNIVERSITY EXTENSION

The University Statutes prescribe the scope of the division's program as follows: "The Division of University Extension is the agency of the University responsible for the extension of the educational resources of the University, other than those provided by the Extension Service in Agriculture and Home Economics, to qualified persons who are not students in residence. In carrying out its mission, the division may conduct extramural courses, short courses, correspondence courses, conferences, and other programs common to university extension divisions." In addition to conducting all of the specified programs, the division's "other programs" include Music, Vocational Testing and Counseling, Firemanship Training, Speakers Bureau, and the Police Training Institute.

The division is a University-wide organization, and, like the Graduate College, draws its teaching staff from all instructional units of the University. Last year, over 800 faculty members representing 66 departments participated in extension division programs. The division's total enrollment in formal instructional programs included more than 34,000 individuals.

Range and Description of Activities

One channel through which the phrase "state-wide campus" becomes a reality is the program of extramural classes. More than 400 late-afternoon, evening, and Saturday classes are held annually throughout the state. Last year, for example, 477 regular classes, the majority of which met 2 to 3 hours a week for 16 weeks, were conducted in 84 cities and enrolled 9,095 off-campus students. These classes cover a wide range of subject matter, and the adult students represent various professions and occupations. Last year's students were distributed as follows: 2,136 graduate credit; 2,980 undergraduate credit; 4,685 non-college credit (instruction is of college level and character, nonetheless); and 125 auditors.

College is as near as the mailbox for some 2,500 students who, on any given day of the year, are enrolled in University of Illinois Correspondence Study Courses. These students receive instruction in regular University credit courses. Their instructors are the same members of the University faculty who teach the courses on-campus. Each student gets his lessons and instructions by mail, returns his prepared assignments to his instructor who grades and returns them with notations and suggestions. As the student completes each course, he is required to take a proctored final examination. More than 100 different college-credit courses are offered by the University of Illinois through correspondence study. In

this way, a student can earn as much as three years' credit toward a University undergraduate degree. Others, not interested in college credit, take regular correspondence courses which are of cultural, recreational, or vocational interest but waive the final examination for college credit.

The music program of the division works in cooperation with the School of Music in planning and conducting instructional programs and learning activities designed to promote increased knowledge of music, greater achievement in the skills, and the furtherance of music education in elementary and secondary schools as well as by community groups in Illinois. It works with music teachers and their pupils, laymen, community leaders, and other musically inclined individuals and groups. In its clinical and demonstration programs, also in its other projects aimed toward raising standards of music education, it works with selected school music pupils, whose teachers are observing, and with musicians in community organizations.

Staff members of the division's music section carry on continuous programs of consultation with community and school organizations; conduct year-long clinics, workshops, demonstrations, conferences, and classes in music education on the campus and in several communities throughout the state; also publish and distribute musical compositions and bulletins annually.

The music section of the division has educational direction of the annual Illinois All-State Music Activity and the Illinois Summer Youth Music camps. The former involved over 2,000 school musicians and 700 teachers last year, while more than 1,000 attended the camps. This section also has responsibility for arranging tours, concerts and community series which bring outstanding University of Illinois music faculty and student soloists and organizations to the schools and communities of the state.

The division's Vocational Testing and Counseling Service was established to help adults who are current or future extension students understand themselves more fully, plan their training, make intelligent vocational decisions, and increase their chances of success in their present position. This service makes use of a battery of psychological tests, supplemented by personal interpretation of test results. Tests are administered and interviews are held throughout the year at Urbana. At various times during the year, the counseling and testing also are available at Chicago and in various other areas of the state. Last year, 348 students utilized this service.

The University of Illinois Speakers Bureau is a clearing house for information about University faculty members who are willing to accept a limited number of engagements for off-campus talks. Two free bulletins are available from the speakers bureau, which is administered by the

Director of Correspondence Courses. One lists the names of faculty speakers and the subjects on which they are prepared to speak. The other lists those who are available as commencement speakers, together with their suggested topics.

Many technical, managerial, and professional persons, singly and in organizations, want to keep abreast of new developments and new knowledge in their field of work; and they are anxious, together with other men and women in all walks of life, to enrich their intellectual and cultural lives. More than 10,000 such men and women find such opportunities in the short courses, conferences, and institutes conducted by the Division of University Extension each year. These programs are held on the campuses, in the conference facilities at Allerton House and the Hott Memorial Center, and in communities throughout Illinois.

The division's state-wide Firemanship Training Program came into being as a result of a special act of the General Assembly which, in turn, was in response to general concern about this crucial aspect of public safety education. Firemanship training is of vital importance in Illinois, where lives and property are protected by nearly 1,200 different fire departments, all but about 125 of them composed entirely of volunteers. The volunteer companies have an annual average membership turnover of about 25 per cent, making training a constant and continuing necessity.

The University of Illinois Police Training Institute conducts a four-week basic course for police officers, held each summer for patrolmen in their early years of service. It conducts on-campus and regional schools and conferences for law enforcement officers and other interested officials in the areas of narcotics control; traffic court practices; police-community relations; police radio communications; chemical tests for intoxication, etc. In its extensive program for those working professionally with young people, it conducts a continuing series of regional two-day conferences on police work with juveniles. Command officer schools also are scheduled on a state and regional basis. Last year, the enrollments in these programs totaled over 1,100.

Developments and Achievements Since 1957

Endeavoring to comply with recommendations in the *First Report of the Study Committee on Future Programs*, emphasis has been placed on upper-level and graduate programs; therefore, the ratio of such programs to lower-level undergraduate courses has increased considerably. Also, in the noncredit offerings, greater emphasis has been placed on higher-level programs. Recognizing the need for mature, competent faculty members to teach these higher-level offerings, and because considerable teaching is performed on the additional pay for additional work basis, we conducted a study comparing extension compensation rates for all academic ranks with the compensation received for campus teaching. This resulted

in the necessity of applying the major portion of funds for rate increases to the ranks of associate professors and full professors. The effects of this act are difficult to measure; however, last year, for the first time, over half of all extramural classes were taught by full professors and associate professors.

A Post-Graduate Certificate Program for Engineers was established in Rockford, Illinois, in the spring of 1959 at the request of many engineers employed in the Rockford-Freepport area. Evening classes are conducted three hours one night a week which provide graduate courses in the several areas of engineering: electrical, mechanical, industrial, civil, theoretical and applied mechanics, and mathematics. An assistant professor of engineering has been added to the division's staff on a half-time basis. He is coordinating the Graduate Certificate Program and supervising the writing and production of a syllabus, also a study guide, which is intended to improve instruction in the professional engineering refresher courses. Between 25 and 30 of these courses are offered annually.

In Urbana, a program of liberal studies for women has been developed and is in its "pilot stage."

A staff member in the Office of Community Development has been assigned for liaison with the extension division to explore possibilities of coordinating activities of these two agencies in urban community development.

In the Summer Youth Music Program, greater emphasis has been placed on education for the understanding of music and its contributions to culture as well as upon individual performances in addition to group activities. The establishment of an Extension Music Advisory Committee has resulted in excellent cooperative working relationships between the School of Music and the Division of University Extension.

A recently established research committee has made significant progress. One report has been published, three articles have been accepted for publication, and a few others have been submitted or are in the stages of final preparation.

The correspondence course offerings have been improved by a transition from released-time to a system of extra pay for the instructional staff.

The operations of the Visual Aids Service have been improved by replacing the general catalog with a series of smaller, special subject-matter catalogs. A vigorous replacement policy is contributing to up-dating films and tapes in the library.

The Office of the Superintendent of Public Instruction and the University cooperated this year in presenting to public school adult education directors a related sequence of three study conferences on leadership training for liberal adult education in Illinois.

A program of particularly distinctive character, "Explorations in Crea-

tive Architecture," was found to be of considerable interest to University faculty and graduate students in addition to the architects and engineers who attended from other parts of the state and nation.

An Institute on Collecting Science Literature for General Reading, attended by approximately 100 public school and college librarians from throughout the country, was concerned with a frequent lament among humanists and social scientists: that scientific and technological knowledge is expanding at a rate far in excess of mankind's ability to absorb and cope with it.

An Institute on the Education of the Gifted was conducted in the summer of 1961 as the second annual offering of its kind in cooperation with the College of Education. It attempted to offer a group of teachers and parents an opportunity to explore general and specific problems related to the schools' "doing something for the gifted."

Two short courses on Electronics and Instrumentation in Chemical Research have been conducted by the division and the Department of Chemistry. Another is scheduled for the summer of 1962.

The 1960 Cardiovascular Nursing Workshop was held in cooperation with the Illinois Heart Association and Illinois Nursing Association for approximately 300 professional nurses.

Regional police training schools have been conducted in cooperation with Northern Illinois University and Southern Illinois University. Another such regional school has been scheduled in cooperation with Eastern Illinois University, and one is being planned with Illinois State Normal. A Regional School for Police Women is being conducted currently in Park Forest. The Police Training Institute has been recently invited to develop a two-year professional certificate program for members of the Chicago Police Department and of suburban departments. Exploratory and developmental plans are now in process.

Planned Future Directions and Goals

As we face an unprecedented, expanding future need for continuing education, we must fortify ourselves with maximum courage and imagination. This will be necessary to augment our ability to conceive, design, and conduct an effective, up-to-date University extension program for Illinois in the years ahead. Achievement of this task will require genuine cooperative efforts in studying and analyzing needs; critically reviewing present programs, practices, and procedures in comparison with apparent future needs; relating our program to the University's major objectives and to its program at large. Such efforts will also aid us in willingly making changes considered desirable or necessary to improve the effectiveness and appropriateness of our total program in relation to anticipated needs about which we in the general extension agency of the University should be concerned, and in recognition of the resources which will be available.

Developing more competent, productive, and effective citizens through pushing back the horizons of their knowledge should be among our major goals, always.

The University's responsibility to its students does not cease upon the issuance of a degree. Accompanying the unprecedented explosion of new knowledge in this era is the equally unprecedented rate of obsolescence of knowledge in the same or related technical or otherwise scientific subject-matter areas. Unless efforts are made to keep abreast of new findings, as well as of other educational and technological developments, knowledge achieved while earning the degree becomes obsolete amazingly soon. Through carefully selected courses and properly designed programs, we should urge the alumni to continue learning.

Objectives and achievements described in preceding paragraphs are appropriate for the state University. We are in a comparatively strong position to conduct programs considered appropriate for this institution, because of our authorization to draw on the major portion of its vast educational and many public service resources. In addition, several outside agencies have considerable resources and are eager to assist us in developing high-level educational and public-service programs.

In compliance with recommendations contained in the *Report of the Study Committee on Future Programs*, the Division of University Extension should continue its efforts to give increased emphasis to upper-level undergraduate, graduate, and postdoctoral programs.

Although future studies might necessitate revisions or changing the division's program and objectives, our goals, presently prescribed, include the following:

Make earnest efforts increasingly to become an integral part of the University.

Strive to develop closer working relationships with academic units and with Co-operative Extension.

Provide leadership in devoting an increased portion of our total resources to even higher-level educational programs for adults.

Stay constantly alert for additional areas which warrant programs of high-level instruction for adults.

Persistently encourage and promote improved adult education programs in the state; support achievement of a state plan for adult education.

Achieve a more highly cooperative and coordinated system of off-campus instruction among the six state-supported institutions of higher education.

Make supreme efforts to encourage and achieve a closer identification with the extension program by colleges, schools, bureaus, institutes; also by an increased number of teaching faculty members.

Introduce or participate in the introduction of as many new, experimental programs as conditions warrant and permit.

Critically review all programs; revise them where prevailing circumstances seem to warrant in the light of longer-term objectives.

Upgrade content of present programs where conditions warrant or permit. (This should be achieved in cooperation with appropriate subject matter departments.) Strive to obtain a new program facility, as well as improved housing for the departmental offices.

STANLEY C. ROBINSON
Dean



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